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SOAP *and* Chemical Specialties

his issue...

w listing of surfactants
arts detergent trends

• • •

re than meets the nose
soap and cleanser scents

• • •

icone polishes success
es other specialties

• • •

rosol room deodorant
velopment check list

Cover photo . . . New 20-ounce economy bottle of "Westpine" disinfectant of West Disinfecting Co., Long Island City, New York. Bottle, by Diamond Glass Co., Philadelphia, features handi-grip. Animated use label on 20-ounce size is by Arden Press, New York. Eight-ounce size shown at right.

Cut your aerosol solvent costs as much as 30%

in low-pressure aerosols

... with

SOLVAY® Methylene Chloride

... Plus

- **EXCELLENT SOLVENT PROPERTIES**
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- **LOW TOXICITY**
- **NON-EXPLOSIVE**
- **COMPATIBLE WITH AEROSOL INGREDIENTS**

Now you can greatly reduce aerosol solvent costs in your low-pressure aerosol formulation with SOLVAY Methylene Chloride.

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Volume XXXI, No. 7 July, 1955

SOAP and Chemical Specialties

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Editor
FRANK J. REILLY

CHARLOTTE HAAS
Associate Editor

Business Manager
THOMAS MORGAN

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President

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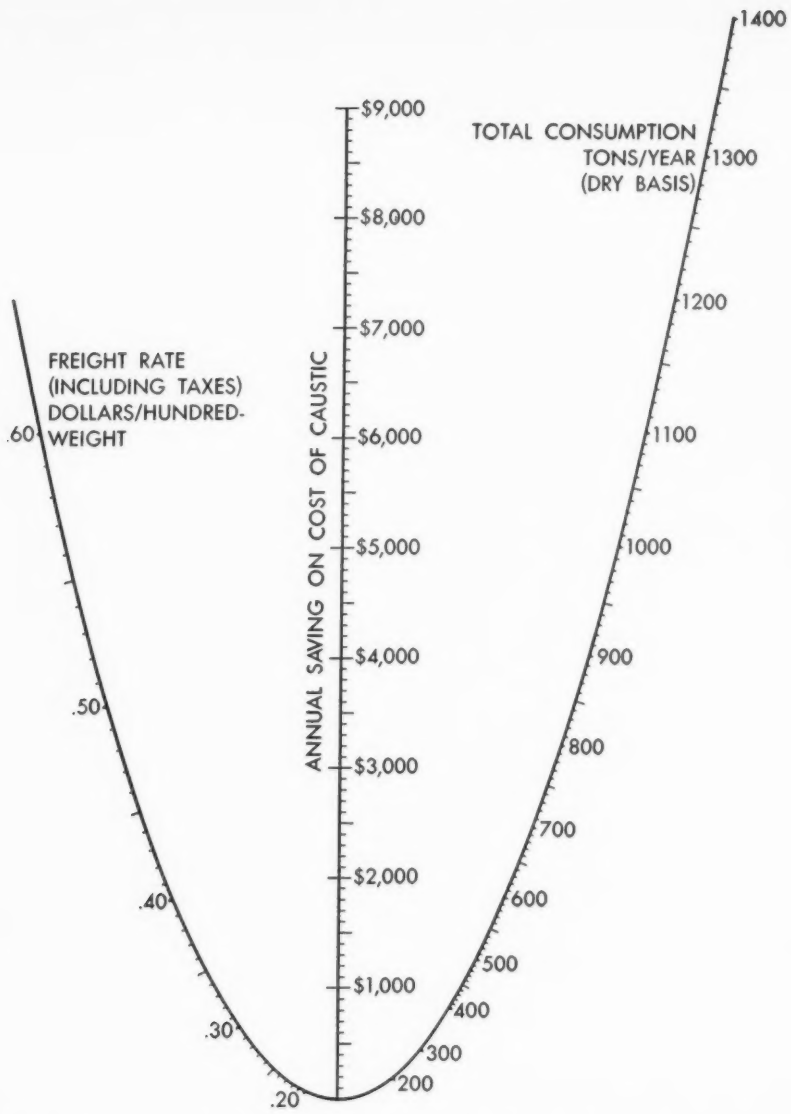

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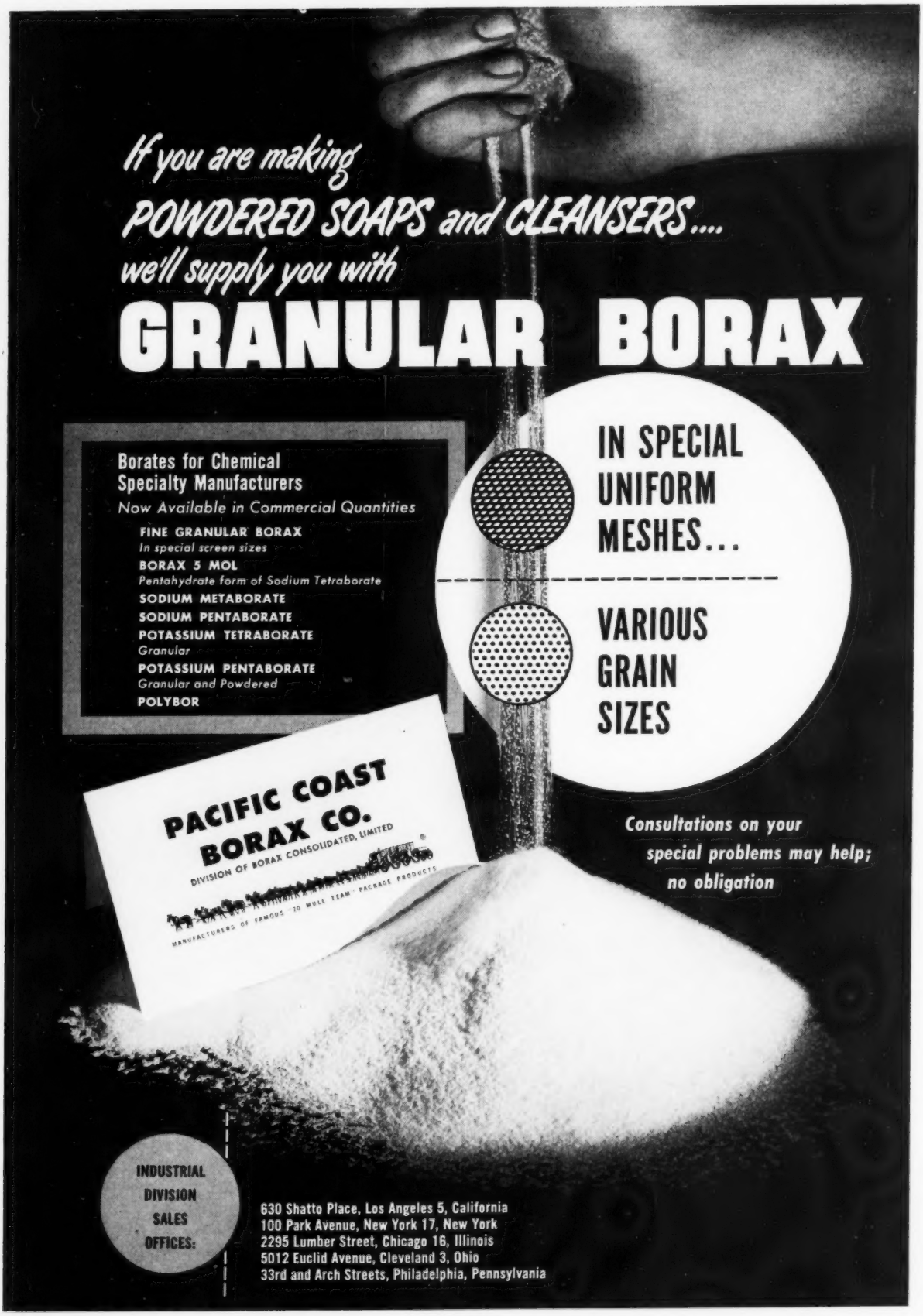
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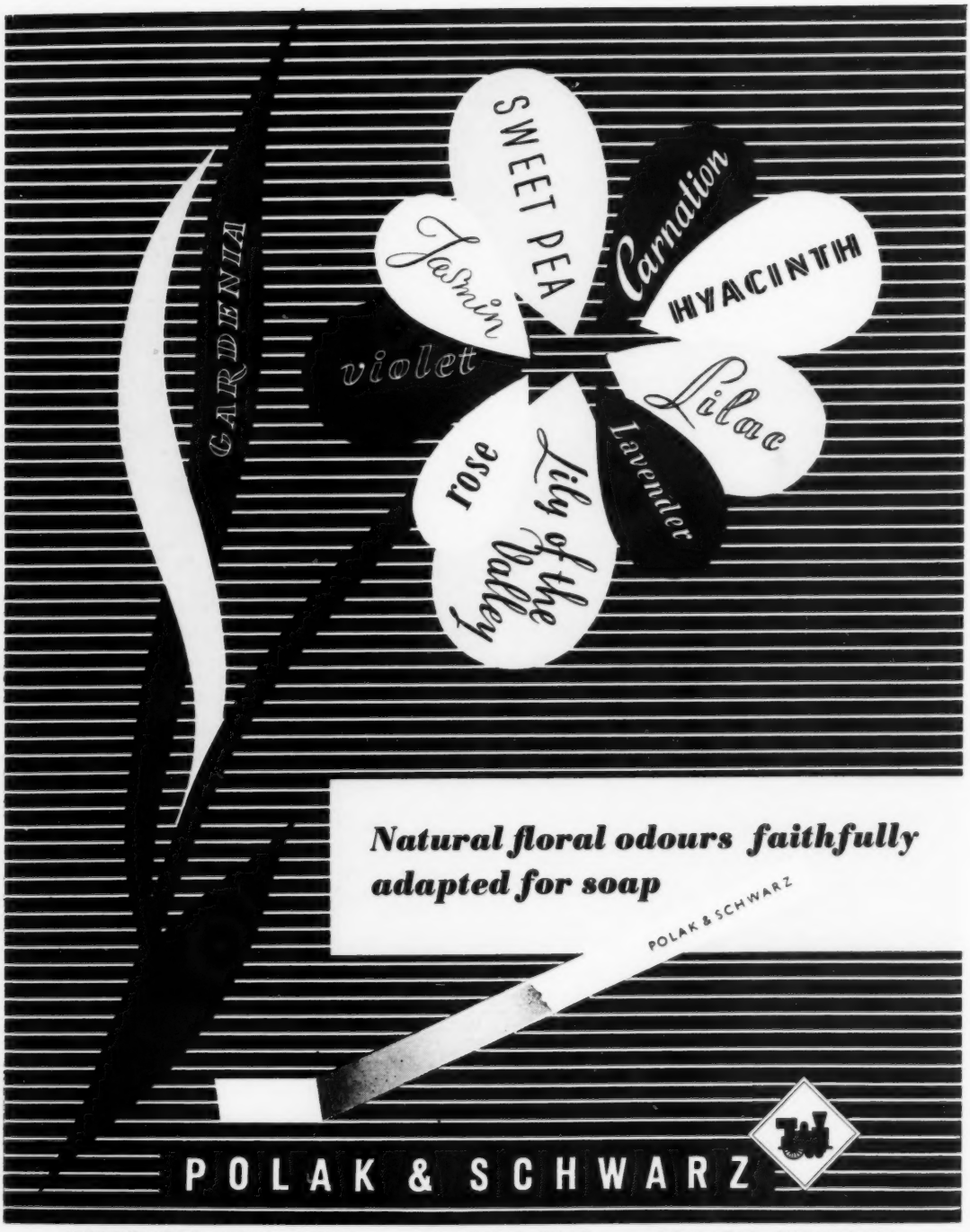
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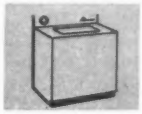
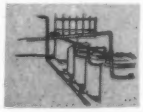


Automatic Laundry Detergents. Where the *right* amount of foam is necessary to promote effective de-soiling of the clothes and satisfactory removal of the soil.



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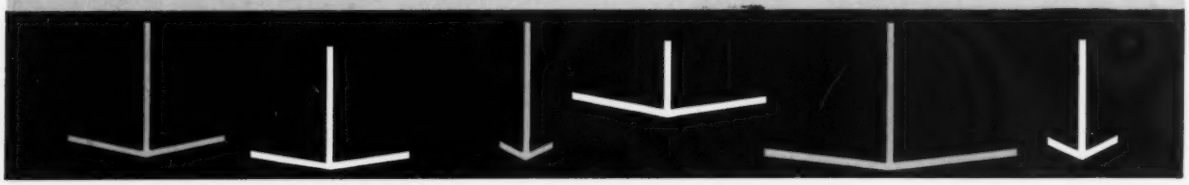

Oronite is the leading producer

of detergent raw materials

To hold the position, year after year, as the world's largest producer of detergent raw materials, Oronite must maintain the highest standards of product quality and service. Beyond this, Oronite conducts a continuous research program on detergents that is second to none. Add together product quality, service, continuous research and competitive pricing and you have the reasons why Oronite is the world leader.

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Why not talk over your needs with an Oronite detergent specialist. Whatever your requirements — liquid, paste or dry — Oronite has a product worth your checking on. Write or phone the Oronite office nearest you for technical bulletins or request a personal call.

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Detergent Alkane
(Basic Raw Material)
Detergent Slurry
Detergent D-40
Detergent D-40 SF
Detergent D-40 FG
Detergent D-60
Purified Sulfonates
Purified Sulfonate "L"
Sodium Sulfonate No. 5
Wetting Agent
Wetting Agent "S"
Dispersant NI-W
Dispersant NI-O

ORONITE CHEMICAL COMPANY

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ORONITE CHEMICAL COMPANY

After Closing . . .

New Costa Rican Pesticide Plant

THE dedication of a large, new insecticide plant by Quimicas Agricolas Centro - Americanas, Ltda., San Jose, Costa Rica, at San Antonio de Belen, Costa Rica, took place last month. At the same time it was anonunced that C. J. Frederickson, formerly export manager of John Powell & Co., New York, had been appointed as chief operating executive of Quimagra, new Costa Rican insecticide producer.

The new plant is said to be capable of producing from 70 to 150 different formulations needed in controlling specific insect infestations in Costa Rica and neighboring countries. The company will process from 25 to 35 high grade technical concentrates which will be sold under the Quimagra label throughout Central America. It is expected that the majority of purchases of technical material will be made in the United States. Plans already call for the production of insecticides containing chlordane, DDT, toxaphene, BHC, aldrin, dieldrin, heptachlor and others.

The plant features a Raymond roller mill, said to be the only one of its kind in Central America. The machine produces exceptionally fine powders—99 percent passing through a 325 mesh screen.

On hand for the dedication of the plant were Costa Rican President Figueres; Bruce Masis, Minister of Agriculture and Industry; Antonio Cappella, officer in charge of Quimagra; Mr. Frederickson, and Joseph P. McKenna, engineer in charge of plant construction.

Prior to joining Powell, Mr. Frederickson was research supervisor of Niagara Sprayer and Chemical Co. He holds a B.S. degree in agriculture from Purdue University, where he majored in entomology.

C. J. Frederickson

—★—

Hooker-Niagara Merger

A merger of Niagara Alkali Co. into Hooker Electrochemical Co. both of Niagara Falls, N. Y., is currently being negotiated, it was announced June 28. The transaction would involve issuance of one and six-tenths of a share of Hooker common stock for each of the outstanding 600,000 stock shares of Niagara. Should the current negotiations result in an agreement approved by the boards of directors of both companies, the proposal will be submitted to the stockholders of both companies at special meetings to be held this Fall.

—★—

Carnauba Price Drops

Carnauba wax dropped to its lowest price in nearly 20 years recently when the price of the refined grade fell to 64 cents a pound. Trade sources predict the price will eventually stabilize at around 80 cents. Readjustment of monetary values in Brazil, main producer, was given as one reason for the sharp price drop. Additional reasons are increasing competition from substitutes. Brazil is now understood to have a surplus of the wax for the first time in several years.

—★—

NSSA Meetings Set

A one-day meeting of eastern regional members of the National Sanitary Supply Association is scheduled to be held Oct. 12 at the Penn-Sherwood Hotel, Philadelphia. An open house reception sponsored by the NSSA and for which Leo J. Kelly, executive vice-president, will be host, is scheduled to be held the evening of Oct. 11. A full day of panel and individual discussions

Costa Rican President Figueres throws switch officially starting production of insecticides at new Quimagra plant in San Antonio de Belen. Looking on are Antonio Cappella, officer of Quimagra; Bruce Masis, Minister of Agriculture and Industry, and Joseph P. McKenna, engineer in charge of plant construction.

of problems in the sanitary supply sales and distributing industry will highlight the meeting. A banquet will conclude the day's events.

Other one-day regional meetings of the National Sanitary Supply Association will be held in Los Angeles, Charlotte, N. C., in August, Birmingham, Ala., Atlanta, and in Houston, Tex., on Sept. 23-24.

—★—

Federal Plant Vacation

The factory of Federal Varnish Division will be closed for vacation and clean-up during the last two weeks of July, it was announced recently. No shipment or delivery will be made during this period and customers are asked to place their orders sufficiently in advance.

—★—

Study Colgate Prospects

Colgate-Palmolive Co., Jersey City, N. J., is analyzed from an investor's point of view in a research report published last month by L. F. Rothschild & Co., New York stock exchange firm. The relatively low current price of the company's common stock is said to be due to disappointing first quarter earnings. These, in turn, are attributed to the strike which closed three of the four domestic Colgate plants for two and one half weeks in March. Earnings for the full year will compare favorably with those of last year the study predicted.

Among newer Colgate products "Ad", a low-sudsing detergent, is believed will have an eventual annual sales potential of about $30,000,000.

William Sims II, executive vice-president of the parent company and president of the international firm, and who has done "a remarkable job" in the foreign division will soon be announced as the choice of the board for the vacant presidency, the report predicts. This may bring about a revision of the accounting methods currently followed by Colgate. Present practice excludes operations of foreign subsidiaries from the annual income statement. This results in an understatement of true earnings by 3 percent, according to the Rothchild report. A return to consolidated earnings reports should considerably increase the market value of the stock, the analysts believe.

Requests for the report should be addressed to L. F. Rothschild & Co., 120 Broadway, N. Y. 5.

New Specialties at Grocery Show

COLGATE-Palmolive Co., Jersey City, N. J., presented their new household aerosol type insecticide, "Kan-Kil" to the 12,000 grocers attending the Chicago convention last month of the National Association of Retail Grocers of the U.S. Available in six or 12 ounce sizes, the new product, containing no DDT, is pleasantly scented and is recommended to control flies, mosquitoes, gnats, roaches, silverfish, moths, carpet beetles, wasps and other common household insect pests.

Introduced at the show was Colgate's new controlled suds detergent, "AD," for automatic or conventional washing machines. "AD" has been under test only in key cities but will shortly be available nationally, L. W. Bukowsi, sales promotion manager from the Jersey City offices, said.

Shown, also, was "Pruf," a new dry bleach which is being tested in limited markets. Visitors received samples of the new "Vel" detergent toilet bar, which is soon to be distributed nationally, it was announced. Frank Reif, general sales manager, was also on hand to help supervise the Chicago exhibit.

Lever Bros. Co., New York, showed, "Lux" liquid detergent and "Lux" toilet cake in its new gold foil wrap. Sales representatives explained that the wrap is sealed to better preserve its scent and also pointed out that a new formula has produced a much whiter soap than previously available.

Procter & Gamble Co., Cincinnati, O., displayed 13 soaps and detergents for household use, along with eight health and beauty aids, with Ed Arnold, manager, group products merchandising, in charge.

Monsanto Chemical Co., St. Louis, devoted all its space to their detergent, "All," and Armour & Co., Chicago, featured "Dial" soap and shampoo.

Chemical specialties ranging from rodenticides to shoe polish, were shown by numerous other exhibitors at the big Navy Pier grocery show.

Plastone Co., Chicago, announced that their furniture polish, distributed previously through jobbers to the tea and coffee trade under the name "'Opal," will now be available nationally in all suitable outlets under the brand name "Turtle Wax." An introductory offer includes a 12 ounce glass bottle of the wax, a cellulose utility sponge and an eight ounce spray-squeeze bottle of "Mrs. Turtle" streakproof glass cleaner, all for 98 cents, retail. A self-liquidating box top coupon was also good for a "pair and a spare" women's nylon hose.

Among other exhibitors noted were: John H. Breck, Inc., Springfield, Mass., hair and scalp preparations; Calgon, Inc., Pittsburgh, Pa., water conditioners, bath products, dishwashing compounds; S. C. Johnson & Son, Inc., Racine, Wis., waxes, automatic polishes, etc.; Simoniz Co., Chicago, waxes, polishes, plastic sponges; Copper Brite, Inc., Los Angeles, Calif., a cleaner for copper-bottom cookware. Ball Bros. Co., Muncie, Ind., glass container manufacturers, showed a "Bonnie Jonnie" liquid bowl cleaner and Best Foods included "Rit" and shoe polishes in its extensive line of food products.

—★—

Tallow Research Group

The Tallow Research Committee of the National Renderers Association will meet July 20 at the Shelburne Hotel, Atlantic City, N.J.,

prior to the regular meeting of the board of directors on July 21. The committee will review current projects and will present recommendations to the board of directors, it was announced by Martin J. Rubin, H. M. Rubin Co., Long Island City, N. Y., chairman of the committee.

Members of the Tallow Research Committee include: Homer Ackerley, National By-Products, Inc., Des Moines; Gene Hopton, West Point Renderers, West Point, Miss.; L. L. Horton, Consolidated Rendering Co., Boston; and Richard B. Mortimer, Peterson Manufacturing Co., Los Angeles.

—★—

David Burnett Scott Dies

David Burnett Scott, 68, for 18 years western sales manager for American Potash & Chemical Corp., Los Angeles, died of a heart attack on June 20 at his home in Altadena, Calif. He had retired in 1952 but continued to act as a consultant on sales matters for the company. He is survived by his wife, a son, a daughter, and five grandchildren.

—★—

Hooker Vancouver Plant

Hooker Chemicals, Ltd., Vancouver, B. C., will build at North Vancouver the first chlorine-caustic soda plant on the Western Canadian seaboard. The announcement was made last month by R. Lindley Murray, president of Hooker Chemicals and of the parent company, Hooker Electrochemical Co., Niagara Falls, N. Y. The new $11 million plant is expected to be on stream in early 1957. The Vancouver operation is a wholly owned subsidiary of Hooker Electrochemical.

About a year ago Hooker completed erection of 200,000 gallon bulk storage facilities for handling liquid caustic soda at Johnston Terminals, Ltd., on False Creek in the city of Vancouver.

The plant will be located on a 75 acre plot and is expected to employ about 100 people. Hooker type S-3A electrolytic cells will be installed.

Kelleher Tussy Sales Rep.

George C. Kelleher has been named sales representative, effective July 1, it was announced recently by Tussy Cosmetiques, New York. In his new position he covers the metropolitan area of New Jersey, Hudson Valley in New York State, and the northeastern section of Pennsylvania. Prior to joining Tussy in 1953, Mr. Kelleher had covered the Newark district for Procter & Gamble Co., Cincinnati. He had been associated with P & G for 13 years.

—★—

British Detergent Market

The majority of British housewives using powdered detergents buy the products of Thomas Hedley & Co., English subsidiary of Procter & Gamble Co., Cincinnati. This is apparent from a survey covering a one-month period last fall and conducted by the London newspaper the *Daily Herald*. Entitled "Washing Powders and Soap Flakes" the survey is one of a series summarizing buying habits of the predominantly working class readership of the national daily. Of all housewives who had purchased powdered detergents during the test period, 39 percent had last bought "Tide" (Hedley); 29 percent "Daz" (Hedley); 16 percent "Omo" (Lever Brothers, Ltd.); 16 percent "Surf" (Lever); and four percent "Dreft" (Hedley). Purchases of liquid household detergents included "Stergene" (Domestos, Ltd., Newcastle on Tyne) 65 percent and "Quix" (Lever) 33 percent. "Persil" (Lever) was the most popular soap powder with 73 percent of most recent purchases and "Lux" (Lever) with 84 percent dominated the soap flakes market.

—★—

New 'Alamask' Reodorants

Rhodia, Inc., New York, announced recently the addition of "Alamask" CPM-55 and "Alamask" CPM-55-X to its line of industrial chemical reodorants for industry. Stronger than other products in the line, these new additions are said to be economical in use. They are intended for application during fat processing and are claimed to help abatement of malodorous gases traceable to amines, proteins, and aldehydes.

—★—

Oil Chemists Short Course

Curriculum details of the short course on analytical techniques to be held by the American Oil Chemists Society Aug. 1-5 at the University of Illinois, Urbana, were announced recently by S. E. Tierney of Swift & Co., Chicago, program chairman. Topics will cover sampling, determination of impurities, loss determinations, color and bleach methods, melting, solidification, and consistency, flavor evaluation, stability and rancidity, performance testing, X-ray spectroscopy, ultraviolet spectroscopy, infrared spectroscopy, dilatometry, chromatography, fractional distillation, fractional solvent crystallization, Craig countercurrent extraction, microscopy, instrumental analysis, statistical methods, measurement of chain length, measurement of unsaturation, determination of hydroxyl groups, determination of triglyeride structure, process control, and establishment of specifications and standards. Speakers will represent industry, academic research, and government.

Registration fee for the short course is $50, and board and room will run about $35. Application forms may be obtained from the society at 35 E. Wacker Drive, Chicago 1, Ill.

—★—

Fred Beyer Dies

Fred Beyer, 61, executive vice-president of P. R. Dreyer Inc., New York, died on July 4. He had been with Dreyer since 1935, when he joined the firm as a salesman. His previous associations included Antoine Chiris Co. and George Lueders, Inc., both of New York. Mr. Beyer is survived by his wife Delia, his son Daniel, also associated with Dreyer, and by two grandchildren.

Armour Licenses Tall Oil

Armour and Co., Chicago, granted three new licenses for the use of its patents in the field of fractional distillation of tall oil, it was announced last month. Licensees are Newport Industries, Inc., Union Bag and Paper Corp., both of New York, and Hercules Powder Co., Wilmington Del.

Hercules announced last December plans to construct a plant at Franklin, Va., to make purified fatty acids, resins, and other products from crude tall oil, obtained from nearby paper mills. Union Bag will build a tall oil distilling plant adjacent to its paper mills at Savannah, Ga., and Newport is operating a plant at Bay Minette, Ala.

Five licenses have so far been granted by Armour to United States companies and others in Great Britain and Norway. Armour uses the process at its chemical plant in McCook, Ill.

—★—

New Diamond Salesmen

Diamond Alkali Co., Cleveland, has appointed Robert M. Hopkins sales representative covering central and southern Florida and Richard J. Jones as sales representative covering northern Florida and southern Georgia, it was announced recently. Mr. Hopkins makes his headquarters in Lakeland and Mr. Jones is located in Jacksonville.

At the same time Diamond announced that Charles P. Egolf, representative in Florida since August 1953, has been transferred to Memphis. He succeeds Martin F. Wilkerson, who has recently been advanced to manager of the firm's branch sales office at Houston, Tex.

—★—

Home Laundry Bulletins

The Agricultural Research Service of USDA expects to publish within the next few months the following bulletins dealing with home economics: "Detergents for Home Laundering"; "Stain Removal from Fabrics"; and "Washing Machines." Publication of the bulletins had been delayed by a directive issued by the research service to channel nearly all home economics funds into nutrition research. This has been reversed by the department following Congressional instructions that home economics research be reviewed.

—★—

Adipic Acid Bulletin

Adipic acid, its properties, reactions, and 80 applications are described in technical bulletin 0-105, published last month by Monsanto Chemical Co., St. Louis, Mo. Detergents, adhesives, and other specialties are among suggested applications. The 36-page publication carries an extensive survey of pertinent patents and other literature.

New Pentaerythritol Plant

A new pentaerythritol plant will be built by Heyden Chemical Corp., New York, it was announced last month by Simon Askin, president. Expected to be in production by the end of 1956, the new $4,000,000 facilities will have a capacity of 25,000,000 pounds a year.

—★—

Sausville to Givaudan

Townsend J. Sausville has joined the sales staff of Givaudan Flavors, Inc., New York, it was announced last month by Hans P. Kessler, sales manager. In his new post Mr. Sausville represents the firm in New York-New Jersey.

Soap Best Safeguard Against Dermatoses

INTELLIGENT use of simple soap and water is the best safe guard against industrial dermatoses and other abnormalities of the skin, which cause of 65 percent of all industrial disease. A feature article published last month in *Industrial Bulletin*, monthly news magazine of the N. Y. State Department of Labor, entitled "Soap—and Worker Health" quotes several authorities in support of the soap and water rule. Dr. Louis Schwartz, former chief of the Dermatology Section, Division of Industrial Hygiene, U. S. Public Health Service, is cited: "By cleanliness we mean not only cleanliness of the person, but cleanliness of the room, machines and clothes. Floors, walls, and ceilings of the rooms in which there are industrial irritants should be wet-cleaned daily. Adequate washing facilities should be provided for workers handling industrial skin irritants. Workers whose clothes become soiled with industrial irritants should be compelled to take supervised shower baths after work, before leaving the factory . . . "

Soap, synthetic detergents, and special industrial soaps incorporating scrubbing agents, their pros and cons, and their special place in the picture are discussed. Indicator soaps are mentioned, which form colored lather as long as traces of the irritant remain on the skin.

Dermatosis problems will not be ended by provision of adequate facilities, unless the employer educates his workers to the necessity of personal cleanliness as a safety measure, according to the article.

Ford Instrument Co. division of Sperry Corp., Long Island City, N. Y., is quoted as an example of plants who have almost eliminated industrial dermatitis by cleanliness educational programs. This firm starts an employee's cleanliness education at his pre-employment physical examination. From then on the worker is never allowed to forget the slogan "Wash up for Safety." Soaps, towels, and cleaning fluids account for about half of the $40,000 annual expenditure by the Ford company for "building operating supplies, sanitation and porters." According to Gilbert F. Tyler, Ford safety director, dermatitis has been reduced to a low of about five minor cases a month thanks to the sustained cleanliness campaign. In the last 18 months only three of these minor cases were serious enough to report under the Workmen's Compensation Law. Morale of employees and production efficiency are up, while absenteeism and insurance rates are down.

Mathieson Caustic Soda: *why settle for less?*

In the lime-soda process—one of the two important methods of making caustic soda—the causticizing operation begins in huge settling tanks like those above. Here, a soda ash solution is treated with milk of lime, calcium carbonate is precipitated and a dilute caustic liquor obtained. This liquid is then filtered and concentrated to the commercial 50% and 73% solutions, as well as to the solid, flake, and granular forms. Lime-soda process caustic is produced at Lake Charles, La., and Saltville, Va.; four other strategically located plants produce electrolytic process caustic to make Mathieson a major source of this essential chemical raw material.

Multiple-process and multiple-plant facilities give Mathieson's caustic soda customers the dependability they want. It means their source of caustic is not controlled by seasonal fluctuations in chlorine demand as is sometimes the case when production is limited to the electrolytic caustic-chlorine process. This operational flexibility is also typical of other Mathieson chemicals—5 chlorine plants, 7 sulphuric acid plants, 3 alkali plants, 3 ammonia plants, provide a safety factor that assures a reliable source of chemical raw materials.

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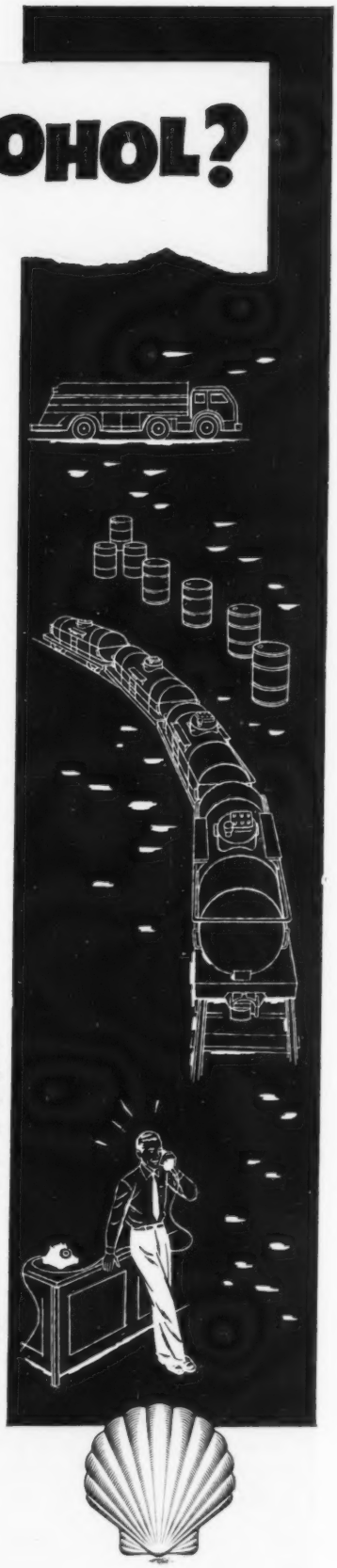

Whether you buy by the drum or the tank car, you will find that Shell Chemical can supply your ethyl alcohol needs both promptly and efficiently.

Shell Chemical's ethyl alcohol is of the highest quality, meeting or surpassing all Federal and commercial specifications for purity. It is available as pure alcohol (190 proof), in specially and completely denatured grades . . . as well as in the proprietary solvent, Neosol®.

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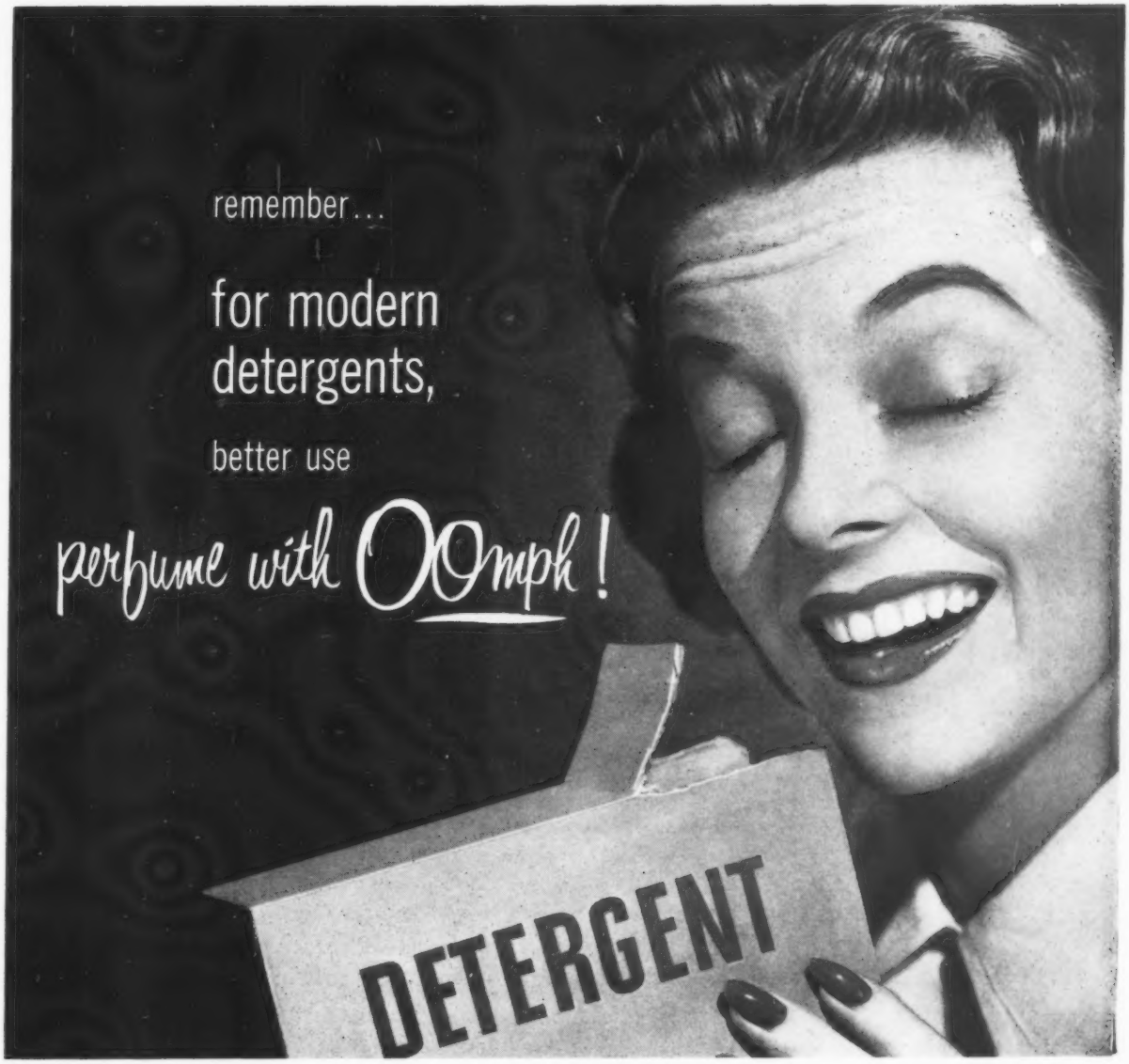

Modern detergents present special scenting problems which have received careful technical attention from Felton Chemists.

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3 Series of Detergents that give almost any property desired by makers of household and industrial detergents

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The Hyonic PE Series is a group of 100% active, nonionic, ethylene condensates. Among the uses of PE 225 are: automatic laundry and dishwashing detergents, car wash powders, wall and floor cleaners. Typical uses of PE 250: in dairy detergent powders, antiseptic sanitizing detergents, dairy milkstone removers. PE 275 may be used in: light duty liquid detergents, pot and pan degreasers, dry cleaning solvent cleaners.

The Hyonic FA Series is a group of alkylolamide derivatives. Of these, FA 20 and FA 40 are 100% active; FA 75 is 70% active. FA 20 is used in dairy cleaners, household degreasers, wax emulsions, among others. FA 40 is useful in floor cleaners, liquid steam cleaners, bottle washing compounds, rug shampoos. FA 75 is ideal for window cleaners, bar glass cleaners, liquid scouring concentrates.

Hyonic FS, a 100% active lauric acid alkylolamide condensate, is recommended as a foam stabilizing additive and detergent synergist. Being a liquid, not a paste, it permits easy addition to liquid and spray-dried formulations. It is used chiefly in shampoos, bubble baths, cosmetics, and some dishwashing detergents.

Partial List of Properties of Hyonics PE, FA, FS

	PE 225	PE 250	PE 275	FA 20	FA 40	FA 75	FS
Soluble in wide variety of organic solvents and electrolytic solutions	✓					✓	
Excellent detergency on fabrics			✓	✓			
High thickening action					✓		✓
Outstanding detergency with phosphate builders					✓	✓	
High detergency over wide ranges of pH		✓					
High detergency over wide ranges of temperature	✓						
Not inactivated by metallic salts	✓						
Compatible with soaps, anionics, cationics	✓						
High foaming		✓	✓	✓	✓	✓	✓
Low foaming	✓						
Effective with alkaline builders	✓		✓	✓			
High detergency over wide ranges of water hardness		✓					
Non-corrosive to iron and steel			✓		✓		
Good wetting agent				✓	✓	✓	✓
Low viscosity curve			✓	✓		✓	
Stable in presence of acids, alkalies, inorganic salts		✓					
Foam Stabilization							✓

In this fast-growing, competitive field of detergents, Nopco's technical men will work with you to the fullest. Write for full information today. Nopco Chemical Company, 706 Industrial St., Harrison, N. J.

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Cleans automatically by chemical action . . . no scrubbing needed. One block in flush tank each week stops odors, stains, dullness. 24 blocks to carton. Also available in tubes of 12 blocks. Private label, on either package, on orders of 4 cases or more.

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Most popular size and shape, for urinals and general use. Made to U. S. Navy specification MIL-D-2178. Attractive cellophane wrap and special tube containers protect from evaporation. Available in pleasant Surf, Lilac and Rose colors. Economical—long lasting.

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Banishes odors at their source. Patented "Snap-on" wire hanger holds cake securely in bowl and practically out of sight. Delicate flower-like fragrance. Ideal for home, hotel, and public toilets—a much larger market than urinal blocks. A sensational repeater, 4 oz. cake.

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By popular demand, now available in 8, 12, 16 and 24 oz. cakes which are effective longer over a larger area. The three larger blocks come in convenient hanger containers. Cellophane wrap prevents evaporation before use. In clean-smelling Surf, Lilac and Rose.

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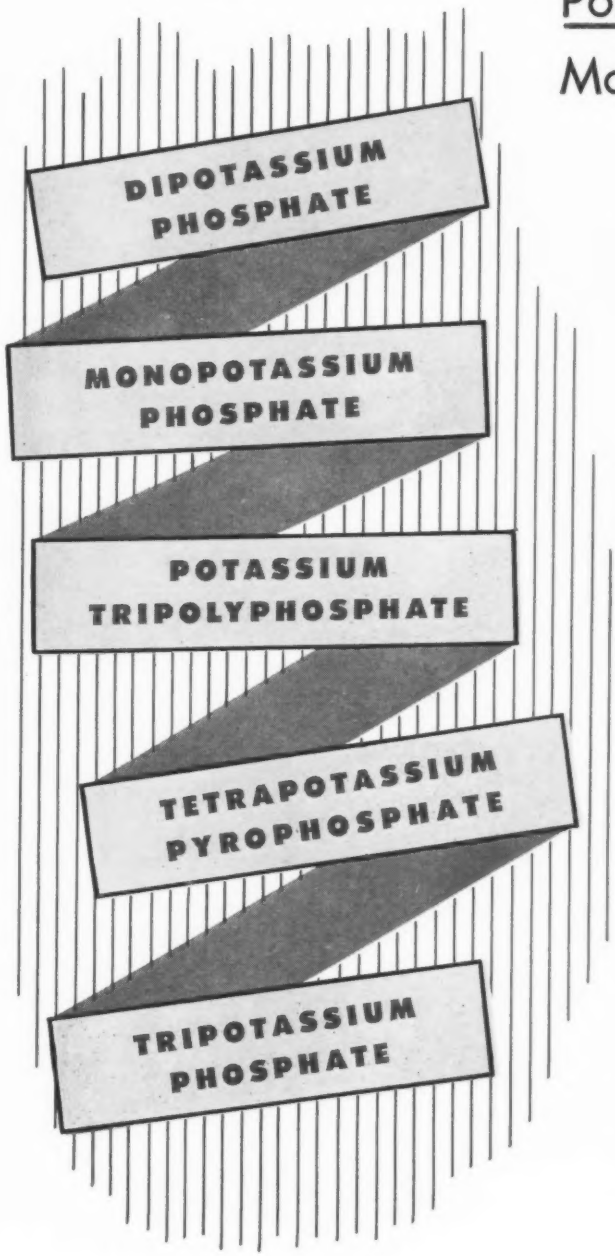
INORGANIC DIVISION: phosphoric acid and complex phosphates **(MARPHOS and EMPIPHOS).**

Being Basic in Both

Potash and Phosphorus Makes



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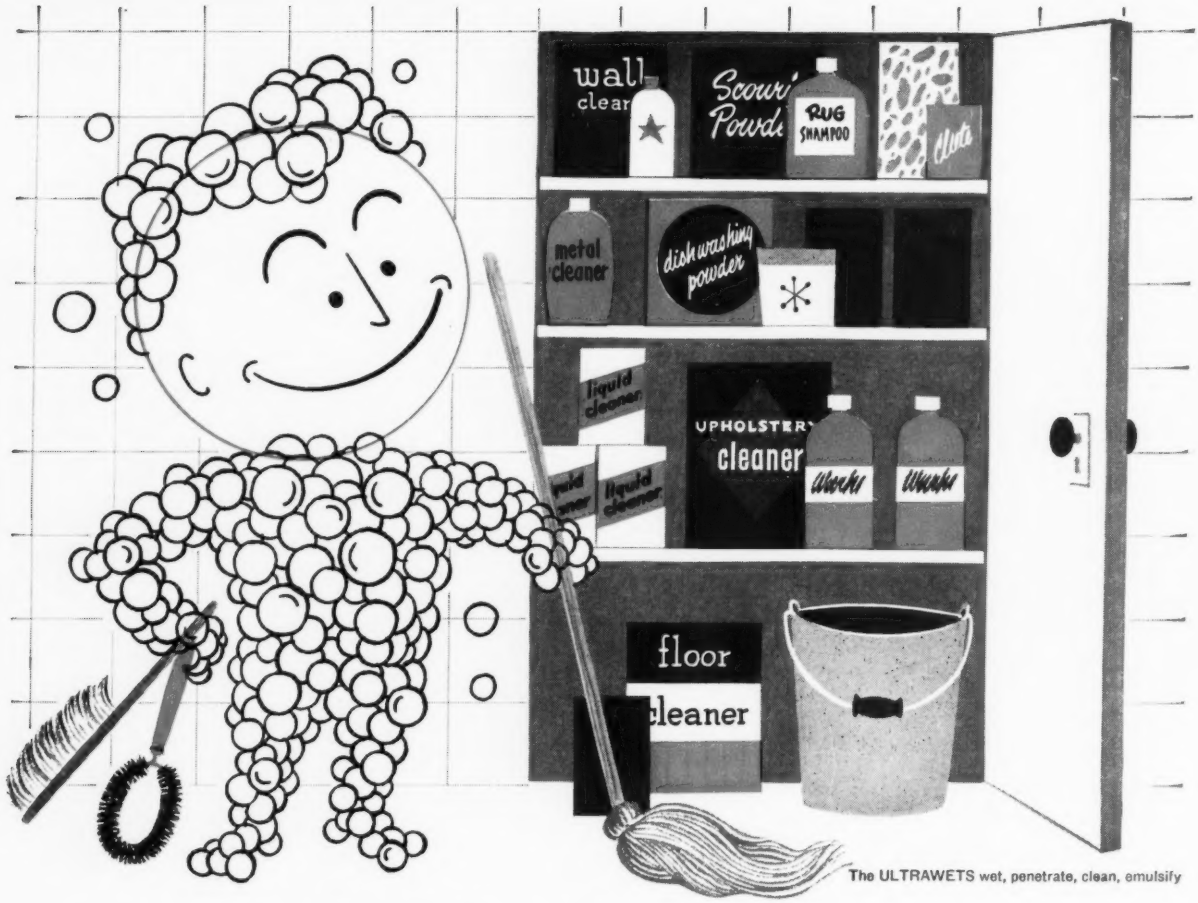

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. . . in brief

as the editor sees it . . .

FOIL . . . . With the rapid strides forward being made in all packaging today, several soap companies both here and abroad have come up with new metal foil wrappers for toilet soap, with more expected to follow. For years, a few of the higher priced soaps, and more especially of the transparent variety, have been wrapped in metal foil rather than paper. Not only does it give a luxury touch to the soap, it likewise gives better retention of perfume and moisture. Whether foil wrap will influence the average housewife to buy regular toilet soap in preference to that wrapped in paper remains to be seen. There seems to be little doubt, however, that the use of foil will permit the delivery of a better bar of soap to the consumer, better perfumed and more uniform in physical characteristics.

* * * * *

BRANDS . . . . A recent meeting of the United States Trademark Association in New York focused a lot of attention on brands and brand names and just how important they are or are not in our present day scheme of marketing. Brand names were termed the "backbone of international trade" and it was pointed out that they "cut across national and ideological boundaries." Government standard and specification merchandise by contrast to branded goods did not receive any noticeable plaudits at the gathering.

Well, maybe brand names do cut across ideological boundaries and all that, but we still think the strongest argument in their favor is that the system of branded merchandise has stood the test of time, being a development of some two hundred years standing in America and much longer in Europe. People simply prefer branded goods. Witness the situation in Europe during the war when unbranded specification foods, soft drinks, et al, were in vogue. Although unobtainable, manufacturers continued to advertise their brands on a "see you when the war is over" theme. The minute the war was over, back came the brands with a rush; out went government specification stuff.

Whether branded goods cost more or not, people prefer them. Experience has been their teacher. They know that they've got to be better. And so, to get back to this trademark association meeting, we think that their speakers might have made out a much stronger case for branded goods than they did.

* * * * *

OFF THE LIST . . . . Because they refused to take part in a sanitary supply trade show run by a large jobbing outfit, a manufacturer is reputed to have been cut off its list of suppliers by the jobber. The story goes that the jobber made no bones about setting up a black list of manufacturers who refused to participate by taking booths and sharing in the expenses of the show.

In the long run, the jobbers pay the bill for these trade shows. That their increasing number has become a burden to participating manufacturers goes without saying. In numerous instances, the business which the manufacturer gets from a show-running jobber doesn't come near paying for the expenses involved, or it cuts the margin of profit on the account to a point where higher prices are inevitable. It's no wonder that some manufacturers would as soon lose the business as participate. And the promises and hopes of more business are indeed nebulous.

We applaud the manufacturer who in the face of being cut off from future business stuck to his guns and refused to be blackjacked. It takes nerve, but we have a hunch it will pay off.

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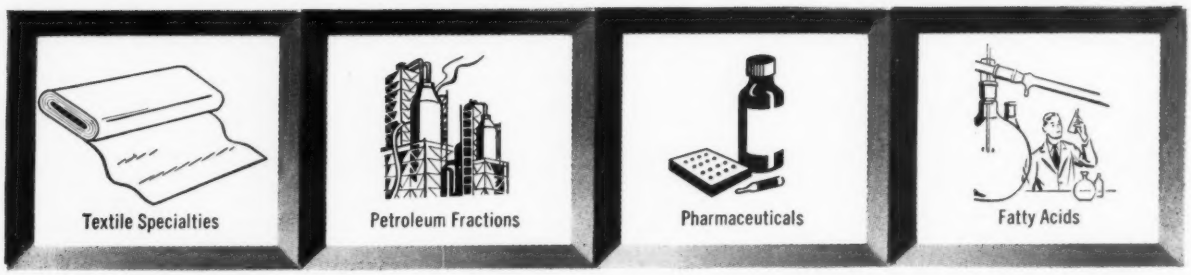

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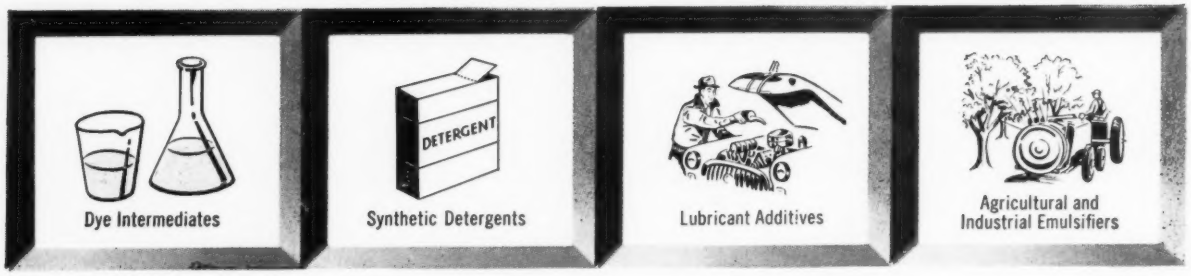

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DRUMS . . . The Steel Shipping Container Institute is in the midst of a campaign to promote the increased sale of new drums. The fellows who sell used and reconditioned drums, it seems, as represented by the National Barrel and Drum Association, are somewhat miffed by the campaign because they maintain that the new drum blokes are issuing "disparaging remarks concerning our industry and our product." They say that the criticism of used drums is wholly unwarranted and are issuing a lot of publicity to combat the alleged "innuendo and implication."

Well, as long as the boys have brought up the subject, we'll chip in our two-cents worth. For years, we've wondered how some people in the chemical specialty and sanitary products fields had the nerve to ship their products in some of the junky drums we have seen. We'd be ashamed to stencil our name on many of these packages, "reconditioned" though they may be. If the used drum is in good condition, well and good, but in our field too many of them are not. After all, the package is really the emissary of the shipper, and if it looks like a bum, the product may be classified likewise.

In the chemical specialty small package field, packages are excellent, miles ahead of the bulk end of the business, that is drums and pails. Some shippers use only new packages; others use all sorts of junk. Maybe this controversy among the drum fellows will focus a little needed attention on this whole packaging subject among chemical and sanitary specialties.

* * * * *

DETERGENT LIST . . . . Some measure of the change that has taken place in the products sold by the soap industry may be grasped by studying the third listing of synthetic detergents and other surface active agents, beginning on page 50 of this issue under the title of "Synthetic Detergents and Emulsifiers—Up to Date." Not only has the number of products expanded, but types and uses have multiplied. All, needless to say, at the expense of soap. This list, which has been painstakingly assembled and checked carefully for accuracy, is truly revealing. Interestingly, the long predicted leveling off in synthetic detergent sales and production has failed as yet to set in.

BAR DETERGENTS . . . . The steady inroads which synthetic detergents have made into the soap market continue to be resisted as far as bar detergents are concerned. Those who in time see soaps completely replaced by synthetics feel that a wholly satisfactory synthetic toilet bar is just around the corner. To date we haven't seen one on the market. And it is our reaction that those which have been put out are feelers rather than a real serious marketing proposition.

As we have pointed out before, the competition which a bar synthetic meets today in the rank and file of American toilet soaps is much keener than that met by laundry synthetics. If we used powders for household toilet use, the story might be different. But the fact remains that our toilet bar soap is just too good, particularly in its physical characteristics, to be pushed aside for a while at least. In the meantime, soapers will continue to fuss around the bar detergent market. Sooner or later, one or more of them is likely to come up with a competitive detergent bar. Until then, we had better not junk our toilet soap kettles.

* * * * *

CONVENTIONS . . . . What kind of conventions do people like? Results of questionnaires sent out by the Toilet Goods Association covering its recent convention would seem to indicate that no two people like the same thing. Some said the food was terrible; others said it was good. Some said the convention was too elaborate; others held the reverse. The majority expressed a dislike for speeches, ceremonies and the like at luncheon. It seems that they prefer to guzzle a few and talk business with customers. And they don't like interference. But on the whole, the convention was heartily approved.

Thus it goes for those who run conventions. Everybody wants something different. Some like meetings and scientific discussions ten hours a day; others like to drink ten hours a day, preferably with customers, but in their absence, with competitors. It's a hell of a job for a convention committee. At best their job is a thankless one. So, we humbly suggest that they do as they have always done, their best, and let those who don't like it go jump in the nearest lake.

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as the reader sees it...

Space Sprays

Editor:

In the June issue of *Soap & Chemical Specialities* in the report of the CSMA meeting, would you please advise the difference between space sprays and DDT sprays, referred to in figures one and two on Pages 134 and 135, respectively. It is not clear as to the distinction between these two forms of insecticides and I would greatly appreciate having the point clarified.

JOHN R. MCCLELLAND,
Hamden, Conn.

Space sprays are those ordinarily used against flying insects and are generally based on pyrethrum, piperonyl butoxide, Lethane, Thanite, Strobane, etc. They are sprayed directly on or about the insects and usually have little or no residual effect. By DDT sprays is meant residual sprays ordinarily used against crawling insects which may or may not be sprayed directly on the insect. These latter are generally based on DDT, chlordane, lindane, etc.—Ed.

★

Shark Repellents

Editor:

Your April issue carried an item indicating that a material effective as a shark repellent would be of interest to whaling operators. Enclosed are copies of military specification MIL-S-2785 and U. S. Patent indicating the composition of effective shark repellent materials based on copper acetate. You may wish to forward this information to the "Manufacturing Chemist" for transmittal to those interested.

L. D. BERGER, JR.
Carbide & Carbon Chemicals Co.
New York.

The item noted by Mr. Berger appeared on page 200, April, 1955, issue, as follows: "Manufacturers of mosquito and fly repellents attention! Do you have a product which will repel sharks also? The whaling fleets off Australia, says the "Manufacturing Chemist" of London, are having shark trouble. It seems that the sharks attack harpooned whales and tear them to pieces before the fishermen can cut them up and process them. They have fed the sharks explosives and chemicals without success. The whalers are at their wits ends. Now here, good friends, is a problem in research,—shark repellent. Any ideas?"

Thanks to Mr. Berger. We are passing his letter and copies of the specification and patent to the "Manufacturing Chemist." We also have duplicate copies of both which are available to any of our readers who may care to see them—Ed.

★

GAW=Unemployment

Editor:

Now that the GAW (Guaranteed Annual Wage) is going into effect in various plants in the U. S., I predict: There will be more men who are steadily employed—also there will be more men who are steadily unemployed. Many men will find it almost impossible to get a job. Watch and see. The U. S. government will have to step in with a "make-work" program for these steadily unemployed men.

Ed Batzner
1116 W. North Ave.
Milwaukee 5, Wis.

Although it's still a little early to say how much unemployment GAW may cause, we can point with pride to the successful working of a somewhat similar plan in our own industry: that of Procter & Gamble Co., Cincinnati. Ed.

★

ASTM Test Data

Editor:

In the report of the annual meeting of Committee D-12 (Soaps and other Detergents) of the American Society for Testing Materials in the April issue of *Soap and Chemical Specialties*, reference was made to a new method for the analysis of sodium tripolyphosphate "accepted for publication as tentative." Is there any means of obtaining further information about this new method?

MISS BETTY TAYLOR,
Marchon Products, Ltd.
Whitehaven, Cumberland,
England.

We'd suggest that Miss Taylor and others who might be interested contact Fred F. Van Atta, assistant secretary of ASTM at 1916 Race Street, Philadelphia 3, Pennsylvania, regarding the availability of the new method of analysis. Ed.

Arnold H. Haverlee, explorer and chef extraordinary serving "Smorrebrod"—the Danish version of Smorgasbord — to guests during formal opening last month of Lien Chemical Co's new plant addition at 3229 W. Grand Ave., Franklin Park, Ill. Pickled octopus, Bourgogne snails and cured Reindeer filet were among the special dishes concocted for the affair by Mr. Haverlee.

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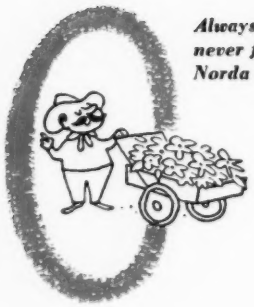

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Foam and Detergency Improvers

New alkylene oxide based nonionics show promise in both light and heavy duty types of alkyl aryl sulfonate detergents

By R. L. Mayhew, C. F. Jelinek, and A. Stefcik*

General Aniline and Film Corp.
Central Research Laboratory
Easton, Pa.

IT has long been recognized that the foaming tendencies of many materials may be improved by the addition of relatively small amounts of materials such as proteins, gums, and other colloidal products, organic liquids, and even inorganic salts. For example, it has been shown (1) that the foam stability of various fatty acids is profoundly affected by the pH and that there is an optimum value at which maximum stability is obtained. Since the pH is a measure of the free acid present, it is concluded that the free acid has an effect on the foam stability. Thus, for a C_{10} acid, a pH of 6 was found to be optimum, whereas for a C_{18} acid, the optimum pH would be 11.

Similarly, it was shown (2) that the foam stability of mixed fatty acids is greater than that of pure products and that the stability may be increased by a wide variety of electrolytes, colloidal materials and certain organic liquids.

Also, as would be expected, this phenomenon is not confined to soap products but applies equally well to other surfactants. Thus, (3) it has been shown that foaming and detergency properties of fatty alcohol sulfates can be materially improved by the addition of relatively small amounts of unsulfated fatty alcohols.

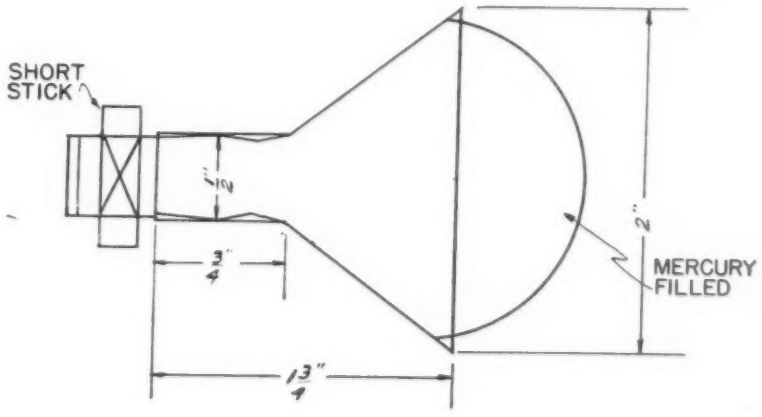
Other products which have proven of considerable merit as foam stabilizers for alkylaryl sulfonates and alcohol sulfates have been a group of products based on the condensation of fatty acids with alkanolamines to yield a complex mixture consisting predominantly of alkanolamides. The product obtained with one mole of alkanolamine is water insoluble, while that obtained by reaction with two moles is water soluble. A recent paper (4) described in some detail the use and properties of these products as foam stabilizers. Although generically these products are classified as nonionics, being complex mixtures as indicated above, they possess properties distinctly different from the nonionics based on the reaction of ethylene oxide with a hydrophobic base such as a fatty acid, fatty alcohol, or an alkylphenol. Thus, while it has been shown that combinations of certain nonionics and alkylaryl sulfonates result in synergistic detergent effects (5) it is generally recognized that these materials do not contribute to the foam stability and in fact a defoaming action may occur in many cases. This effect may be demonstrated by means of the foam end point in a simulated dishwashing test by comparing a typical sodium alkylaryl sulfonate with various combinations of an alkylaryl sulfonate and nonionics. The test is carried out briefly as follows:

Equipment

THE equipment required is quite simple and consists of the following materials: 1) Three-foot tall heavy duty ringstand; 2) ½-gallon funnel; 3) Stop watch; 4) Approximately 30 heavy duty dinner plates; 5) A conventional dishpan; 6) A dishrag which is shown schematically in Figure 1. This dishrag is prepared as follows:

Two round toy balloons of about two inch diameter (deflated) are inserted one inside the other for additional strength. Then about 350 g. of mercury are poured into the inner balloon and the necks of the balloons are tied together. The filled balloons are then stuffed in a conical glass mantle so that the bot-

Figure 1. Schematic diagram of mercury-filled rubber balloon "dishrag."



*Paper presented before 41st midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 17, 1955.

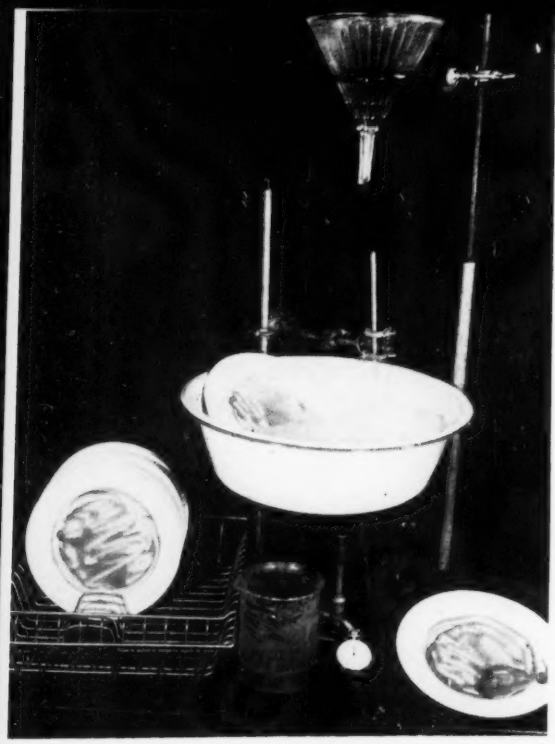


Figure 2. Equipment necessary for manual dishwashing evaluation.

toms of the balloons protrude beneath the mantle. The necks of the balloons are pulled through and secured at the other end of the mantle.

The soil which is applied to the dinner plates by smearing ½ teaspoon over their surface consists of 80 percent vegetable shortening and 20 percent flour plus a small amount of Oildag (colloidal carbon) to give a distinctive "dirty" coloring and a small amount of a fluorescent dye (Blancophor AW*) for purposes to be described later. Figure 2 illustrates the equipment required.

The evaluation is then carried out as follows:

The required quantity of detergent to be tested (e.g., 0.05 percent active) is weighed out and placed in the bottom of a large dishpan containing one liter of water which is used to dissolve the detergent to be tested. Then an additional three liters of water at 45°C. is poured into the dishpan through the large glass funnel from a height of 30 inches and directly above the center of the dishpan in order to simulate the action of water coming from a faucet. After 30 seconds, the soiled dishes are washed with the weighted rubber "dishrag" by merely pushing the dishrag over the dishes with minimum pressure until the dish is clean. After eight dishes have been washed, the time is noted and recorded. Additional dishes are then washed until the foam disappears. Using this method, we have been able to obtain quite reproducible results with a significant difference in the range of one-two dishes providing the same operator is running the test and it is carried out on the same day. There is a certain day-to-day variation which necessitates running at least one control each day. Thus, slight discrepancies which may occur in various tables of this paper reflect this day-to-day variation.

As is well known, the chemical description of many surfactants is both clumsy and lengthy. Therefore, in order to circumvent this problem to a degree at least, we have chosen to refer to the various products about which we will be talking, by the trade names under which they are sold. However, in order to identify these products, we have listed them in Table I along with their general chemical type. It should also be stated that the listing here of a particular product does not necessarily constitute a recommendation of that product by us. The results obtained in our dishwashing test where we compare an alkylaryl sulfonate with combinations of an alkylaryl sulfonate and some typical nonionics are illustrated in Table II.

Thus, it may be seen that while a slight boosting effect with an alkylphenol nonionic in soft water is effected, there is actually a defoaming action in hard water. The fatty alcohol nonionic produces no appreciable effect in either hard or soft water, while the tall oil product results in a defoaming action in both instances. The alkanolamide on the other hand, results in appreciable foam stabilization in the 10 ppm. water and exhibits no adverse effect at 300 ppm.

In the past, there has been a tremendous amount of work carried out on the theory and measurement of foams and a large number of techniques have been devised for the measurement of foam. In the final analysis, however, it has been difficult in many cases to correlate the foam stability obtained by these tests with observations found under actual use conditions.

Also, in spite of the large amount of work carried out on the theory of foams to date, no complete solution to all of the factors necessary for obtaining stable foams has been arrived at.

Therefore, no attempt will be made in this paper to explain the mechanisms by which these foam stabilizers operate but rather to

Table I. List of surfactants referred to in this article.

Trade Name	Chemical type
1. Sorapon SF-13*	Alkylaryl sulfonate
2. Antarox B-500*	Tall oil-ethylene oxide reaction product
3. Igepal CO-630*	Alkylphenol-ethylene oxide reaction product
4. Agent 1835-171	Fatty alcohol-ethylene oxide reaction product
5. Ninol AA-62**	Lauric acid-diethanolamine condensation product
6. Alipal CO-436*	Sulfate ester of an alkylphenoxy-polyoxyethylene ethanol
7. Duponol ME***	Sodium lauryl sulfate
8. Igepon T*	Sodium N-oleoyl, N-methyl taurine
9. Ultrawet 60-K****	Alkylaryl sulfonate

*Tradename, General Aniline and Film Corp.
**Tradename, Ninol Laboratories, Inc.
***Tradename, E. I. du Pont de Nemours & Co.
****Tradename, Atlantic Refining Co.

Table II. Dishwashing: Combinations of Alkylaryl Sulfonates and Typical Nonionics

Formulation, Active Ingredient Basis	Foam End Point, Dishes Washed, .05% Active Ingredient, Water Hardness 10 ppm.	300 ppm.
1. Sorapon SF-13	5	14
2. 70 Sorapon SF-13 / 30 Antarox B-500	3	11
3. 70 Sorapon SF-13 / 30 Igepal CO-630	7	8
4. 70 Sorapon SF-13 / 30 Agent 1835-171	5	14
5. 70 Sorapon SF-13 / 30 Ninol AA-62	11	14

Table III. Dishwashing, Sodium Dodecylbenzene Sulfonate and Nonionic Additive

Dishes Washed, Foam End Point, 0.05% Active Ingredient

Nonionic No.	2		3			4[1]			5[2]			6		
Water Hardness, ppm.	10	50	10	50	300	10	50	300	10	50	300	10	50	300
Ratio														
1) 100:0	7	16	7	16		7	16		7	16		7	16	
2) 90:10		14		16			15			19			17	
3) 80:20		13		16			17			19			18	
4) 70:30	10	12	13	17	17	11	20	20	11	22	23	8	20	
5) 50:50		6		17			17			18			14	
6) 0:100		2		10			10			10			2	

[1]Emulphogene BC-710, Trademark of General Aniline and Film Corp.
[2]Emulphogene BC-840, Trademark of General Aniline and Film Corp.

assess their properties in terms of realistic type tests for the specific end uses for which they are recommended, such as, for example, the dishwashing test just described.

Turning now to the products which are the subject of this paper, it has been found that, in contradistinction to the typical nonionics just mentioned, an interesting class of polyoxyalkylene based nonionics exhibit excellent foam stabilizing and detergency improving properties. These products have been found to be of value in both built and unbuilt formulations. Although they are not operative with all classes of anionic surfactants, nevertheless, they exhibit foam stabilizing tendencies for such anionics as alkylaryl sulfonates, acyl taurines, and sulfated alkylphenol polyoxyethylated ethanols. As might be predicted for these foam and detergency properties, there is an optimum ratio of alkylene oxide to base for a given application although this will vary slightly for built and unbuilt formulations. The effect of various ratios of base-alkylene oxide on a typical alkylaryl sulfonate using again the manual dishwashing test, is depicted in Table III as well as the effect of various ratios of nonionic/anionic. In this table, the various nonionic products are arranged in order of increasing water solubility proceeding from left to right.

As can be seen from a brief study of these data, an optimum ratio for foam stability of anionic nonionic appears to be at the 70/30 ratio. With regard to relative water solubility of the foam improvers, the optimum for foam boosting in soft water is attained with Nonionic No. 3. For medium and hard water, the optimum is a more water soluble product as represented by Nonionic No. 5. It was noted that with the addition of the foam stabilizer to the alkylaryl sulfonate, a creamier, denser type of foam was formed.

Although some foam stabilizing effects can be obtained by the use of these nonionics with alkylphenol polyoxyethylene ethanol sulfate, the improvements are not as impressive as with the alkylaryl sulfonates. Table IV illustrates the effects obtained with this type of anionic.

Thus, it can be seen that while a definite foam stabilizing effect is found in soft water with Nonionics Nos. 2, 3, 4, and 5, a slight defoaming action occurs in the hard water with these same ratios.

In addition to formulations based on two components, of considerable interest also are products composed of three components. Although it is immediately apparent that it has been impractical to investigate completely all of the possible permutations and combinations involved in a ternary system, a few interesting formulations are presented for consideration in Table V.

Table IV. Dishwashing; Alipal CO-436 and Nonionic Additive

Dishes Washed, Foam End Point, 0.05% Active Ingredient

Nonionic No.	1		2		3		4		5	
Water Hardness, ppm.	10	300	10	300	10	300	10	300	10	300
Ratio, Anionic: Nonionic Act. Ingredient Basis										
100:0	6	17	6	17	6	17	6	17	6	17
70:30	4	14	8	13	9	15	10	14	8	15

Detergency

So far, our discussion has dealt only with the foam stabilizing properties of these compounds without taking into consideration their detergency properties. In our dishwashing test, for example, the dishes are washed until essentially all of the soil had been removed but no attempt was made to determine the relative cleanliness of the dishes

Table V. Dishwashing; Ternary Systems

Dishes Washed, Foam End Point
0.05% Active Ingredient

Formulation Based on Active Ingredient		Water Hardness 10 ppm.	Water Hardness 300 ppm.
Sorapon SF-13	40	12	17
Alipal CO-436	40		
Nonionic No. 3	20		
Sorapon SF-13	40	10	18
Alipal CO-436	40		
Nonionic No. 5	20		
Sorapon SF-13	50	14	21
Ninol AA-62	15		
Nonionic No. 5	35		
Sorapon SF-13	50	18	17
Ninol AA-62	25		
Nonionic No. 3	25		
Sorapon SF-13	50	18	21
Ninol AA-62	25		
Nonionic No. 5	25		

Table VI. Reference Scale for Evaluating Dishwashing Detergency

Rating	Appearance Under U.V. Light
—	No visible soil.
×	Traces of soil (not detectable by ordinary light.
××	Satisfactory under ordinary light but definite spotting under U.V. light.
×××	Visible under ordinary light. Heavy spotting under U.V. light.
××××	Heavy deposit under ordinary light. Usually film of fat present.
××××	Very bad.

when washed with various detergents. It is certainly true that from an esthetic point of view, it is highly desirable to have a nice foamy head of suds covering the surface of water thus hiding from view the unsightly grease and other food soil which accumulates. However, in the final analysis, the purpose of a dishwashing detergent is to remove the soil completely from the surface of the dish thus ensuring not only a clean utensil but one which in addition has a minimum of residual bacteria present. Since it is logical to assume that there will be differences in detergency as well as foam stability between different detergents, it was decided to attempt to assess the value of these products from a detergency standpoint. Using our present test method, we have previously shown that for most detergents, soil cannot be removed from dishes after the foam end point has been reached. However, there has existed the belief for some time that while in a given test a detergent was removing the gross soil from the plate, it was not actually getting all of the dishes completely clean. In order to help us in assessing this factor, we added a small amount of U.V. dye (Blancophor AW) as mentioned previously, to our soil. Dishes were then washed to the foam end point according to our normal procedure using the rubber balloon "dishrag." The washed plates were then examined visually in both U.V. and ordinary light and ratings given according to a reference scale which was devised and reported recently by Lanners (7).

The reference scale is depicted in Table VI. A dish is arbitrarily considered unsatisfactory if it has a rating of +++ or greater.

Results using this method have been both interesting and enlightening. It has been found, for example, that two detergents having the same foam end point may have entirely different detergent end points. Also, generally speaking, most detergents stop washing the dishes clean before the foam end point is reached, although there are exceptions to this generalization. The alkylaryl sulfonates, for example, appear to have particularly poor detergency in terms of their foam end point while the nonionics are quite good in this respect. The type of data obtained using this method is illustrated in Table VII.

As can readily be seen, the nonionics such as "Igepal CO-630", are the only products whose detergency end point coincides with their foam end point although the "Alipal CO-436" and "Duponol ME" show relatively good detergency in hard water. All of the other products show a detergency end point inferior to their foam end point.

Thus, using this method as a means of assessing the detergency values of the various formulations employing our foam stabilizers, we have found, in general, a noticeable improvement in detergency as well as foam stability. The results obtained using this method are shown in Table VIII.

Thus, as can be seen from this table, a definite improvement in detergency is noted when 30 parts of the Nonionics No. 3 and 5 are substituted for the alkylaryl sulfonate although the detergency

(*Turn to Page* 167)

Table VII. Comparison of Foam and Detergency End Points for Typical Surfactants

Compound	% Used Active Ingredient	Dishes Washed: Foam End Point Water Hardness 10 ppm.	Foam End Point Water Hardness 300 ppm.	Detergency End Point Water Hardness 10 ppm.	Detergency End Point Water Hardness 300 ppm.
Igepal CO-630	0.05	9	8	9	8
Sorapon SF-13	0.05	7	16	4	4
Duponol ME	0.05	7	15	5	12
Igepon T	0.05	6	10	6	6
Alipal CO-436	0.05	7	17	4	14

Table VIII. Comparison of Foam and Detergency End Points Two Component Systems

Compound	% Used Active Ingredient	Dishes Washed: Foam End Point Water Hardness 10 ppm.	Foam End Point Water Hardness 300 ppm.	Detergency End Point Water Hardness 10 ppm.	Detergency End Point Water Hardness 300 ppm.
1. Sorapon SF-13	0.05	7	16	4	4
2. Sorapon SF-13 70 / Nonionic No. 3 30	0.05	14	18	8	8
3. Sorapon SF-13 70 / Nonionic No. 5 30	0.05	9	21	9	11
4. Sorapon SF-13 70 / Ninol AA-62 30	0.05	14	16	5	5

Table IX. Comparison of Foam and Detergency End Point Three Component Systems

Compound	% Used Active Ingredient	Dishes Washed: Foam End Point Water Hardness 10 ppm.	Foam End Point Water Hardness 300 ppm.	Detergency End Point Water Hardness 10 ppm.	Detergency End Point Water Hardness 300 ppm.
1. Sorapon SF-13 40 / Alipal CO-436 40 / Nonionic No. 3 20	0.05	12	17	8	16
2. Sorapon SF-13 40 / Alipal CO-436 40 / Nonionic No. 5 20	0.05	10	18	10	18
3. Sorapon SF-13	0.05	7	16	4	4
4. Alipal CO-436	0.05	7	17	4	14

Perfuming Detergents and Cleansers

By Victor DiGiacomo and Leonard Stoller
Givaudan-Delawanna, Inc.

SOMETHING new has been given a prominent position in the detergent and cleanser advertisements during the last year. The "gentle to your hands" theme is no longer the only factor offered to the consumer for consideration. A new and perhaps more important incentive is now presented to the consumer in the newspaper, magazine and television advertisements. That sales incentive—so important in today's market—is fragrance!

The use of pleasant scent in consumer products is no longer a subject for theorizing and experimenting—it is an accepted fact. The number of consumer goods into which pleasant scents are incorporated increases annually, and the eagerness with which they are accepted by the consumer has proved beyond any doubt that fragrance is an important sales consideration. It can be safely said that the consumer of 1955 would look askance at some of the products her sisters of 1935 used in their homes—when fragrance was not considered an important ingredient.

The synthetic detergents and household cleansers are one of the largest categories of consumer goods into which pleasant scent is incorporated. Insofar as the consumer market is concerned, these products, particularly the detergents, are considered extremely important. The popularity of the synthetic detergents can best be illustrated by citing actual sales figures. Total sales for the year 1954 were $492,260,000, against a total annual sales amount for 1953 of $434,770,000. In 1952, sales amounted to $331,220,000 and in 1951 the total sold was $278,970,000. Cleansers also showed an increase over a three-year period but not as spectacular. Cleanser sales amounted to $63,630,000 in 1953; $61,400,000 in 1952; and $59,590,000 in 1950.

Function of Fragrance

THE addition of fragrance to detergents and cleansers serves two very distinct purposes. The first function is aesthetic in nature. The young housewife of 1955 has become odor conscious and prefers to use products having a pleasant scent. It has been proved that she will reject an unpleasant-smelling or even odorless product if there is a pleasantly-scented material available to her. The addition of fragrance, therefore, adds consumer appeal to the finished product and makes it more attractive to the user. Furthermore, a distinctive scent can serve as a trademark by which the product of one manufacturer could be easily identified from that of a competitor.

The second function of perfume is purely utilitarian. Many of the detergents and cleansers now on the market have, in their original form, an inherent and unpleasant odor which would make the product unacceptable to the consumer were it to be sold as such. This odor must be carefully and effectively masked before the finished product is packaged and it is in the performance of this function that a fragrance product plays a vital role.

The selection of the proper fragrance is extremely important and must be given careful consideration by the manufacturer and the perfumer. The selection depends not only on the nature of the product to be perfumed, but its end use as well. This is a cooperative task and cannot be adequately done by the producer or perfumer alone.

From past experience, we have learned that while the housewife might not find the residual odor of the detergent left on her clothing offensive, she most certainly would not be in favor of having that odor left on her dishes. This must, therefore, be kept in mind not only when the fragrance to be used is decided upon but when the concentration to be incorporated into the finished product is approved.

We have also learned that for dishwashing detergents, neutral or citrus type odors are acceptable to the consumer. These same scents have also been used in popular washroom detergents as have fresh-clean fragrances and light floral bouquets. Cleansers with medium or light floral bouquets and pine scents

have also proved to be acceptable for home use.

The application of fragrance to industrial detergents and cleansers involves somewhat more insofar as odor selection is concerned and will be covered in another article. We might mention, however, that industrial users of these products have chosen such scents as the individual florals; i.e., carnation; and various floral bouquets.

Perfuming Problems

BEFORE we attempt to outline the problems which face the perfumer when he is working with synthetic detergents and cleansers there are other important factors which we must mention. Above all, it is extremely important that the perfumer know the product he is perfuming. He must know the physical and chemical properties of the material he is perfuming so that he may determine whether or not any of the basic ingredients used in manufacture will have a deleterious effect on the perfume to be added. Some of the raw materials have been known to cause perfume deterioration and changes in the character of the scent.

Secondly, the perfumer must have a thorough knowledge of the aromatic chemicals and other perfume materials with which his perfume will be compounded. The compatibility of these materials with the basic ingredients of the product to be perfumed is extremely important since even slight incompatibility necessitates the remaking of the entire perfume formulation.

In addition to having a knowledge of the chemistry of the detergent or cleanser, the perfumer must be equally versed regarding the additives which these products may contain. The additives now in use include such materials as bactericides, phosphates, quaternary ammonium compounds, foaming and suspending agents, water softeners and others—all of which complicate the perfuming process somewhat. Most of these additives present a more difficult perfuming problem than do the detergents and cleansers themselves. Some of them tend to neutralize or decompose the perfume which is added and others have inherent odors which require careful and individual attention on the part of the perfumer so that proper coverage may be attained.

The perfumer must also be fully aware of the pH of the entire compound. The additives and the detergent or cleanser itself may have a bearing on the pH factor and care must be taken to prepare a fragrance which will fit the requirements of the individual products.

Although product packaging seems to be far afield, it too must be considered by the perfumer. The package is an important factor when considering detergents or cleansers with a high pH. If any of the materials used are hydroscopic, hydrolysis may occur which may result in the decomposition of perfume ingredients. The container must, therefore, be chosen carefully by the manufacturer.

Testing

AFTER the selection of the fragrance and its incorporation into the finished product, one additional step is absolutely necessary before the detergent or cleanser is ready to be placed on the retailer's shelf. In order to determine the stability and the compatibility of the basic materials with the perfume being used, the perfumed product must be put through a series of actual shelf tests. We have learned that testing under normal shelf conditions is indispensable and feel that a period of six months is the minimum length of time for these tests.

It is possible to conduct accelerated shelf tests under elevated temperatures but it is our opinion that these tests do not give a true picture of the product's stability. Our own laboratories prefer to conduct the six-month shelf tests and feel that such tests, although time-consuming, will prevent any possibility of error in evaluation.

In discussing the perfuming of any product, the concentration of perfume to be used must not be ignored since this is a topic of vital interest to the manufacturer. To determine the concentration, it is necessary to consider not only the type of scent which has been selected but the end use of the finished product as well. It is also necessary to keep in mind the length of shelf life which is normal for the type of product involved.

For materials now on the market, adequate perfuming can be achieved with rather low concentrations. The entire process can be accomplished at a fraction of a cent per pound of detergent or cleanser.

Conclusion

IN closing, we must emphasize that the perfuming of detergents and cleansers is a problem that must be placed in the hands of experienced perfumers who are in a position to study the product and select or prepare a fragrance perfectly suited for the purpose. The selection of the fragrance must be made by both the perfumer and the producer and consumer acceptance of the perfumed product must be kept in mind. Proper testing must be done before the perfumed product is released for sale.

—★—

Domestic Water Softening

Soap is termed an "expensive, inefficient and untidy means of softening water," in an article on the hard water problem, published recently in the *Rohm & Haas Reporter*. Domestic softening units based on synthetic ion exchange resins are the answer, according to Rohm & Haas Co., Philadelphia, makers of "Amberlite" resins. The resins carry a load of sodium ions. When they come into contact with water they retain the calcium and magnesium ions, cause of water hardness, and release the sodium ions. Sodium salts do not form insoluble compounds when heated. Thus scale deposit from lime and magnesium salts in hot water pipes is eliminated. Sodium salts do not restrain the action of soap, and do not function adversely in any way.

TRANSPARENT SOAPS

By F. V. Wells*

Part II

In the commercial production of transparent toilet soaps, the conventional milled soap base is normally modified at least to the extent of including castor oil and/or rosin. J. W. McBain[10] has described one well-known transparent soap as being essentially a tallow-rosin soap. Davidsohn has gone further than this by suggesting [11]that a similar soap may be made by saponifying 43 per cent first-grade beef tallow with 13.5 per cent rosin, 20 per cent of alcohol being used in the process. Schaal's formula for a similar type of soap[14] includes not only tallow and rosin but also small quantities of castor and coconut oils. (I would add that the best-known British transparent soap, though a good toilet soap of adequate cleansing power, has only poor sudsing properties, giving a sparse but creamy lather.)

A Henkel patent for transparent soaps ignores rosin entirely but makes use of 10 per cent castor oil or castor oil fatty acids, in association with as much as 18 per cent coconut oil, 69 per cent tallow and 12 per cent olive oil.[12] Taking the "prior art" as a guide, we may profitably consider these and other conventional fat stocks individually.

Tallows. High-grade beef tallow heads this category. With a titre of 40-45°C it provides the body and detergent properties in hot water that other stocks lack. It contains about 19 per cent stearic acid, 29 palmitic, three linoleic and 47 oleic, against the respective 4:43:9:43 pattern of the bleached palm oil that sometimes partly replaces it. Tallows and similar high titre fats are to be found in most published formulae for this type of soap in proportions ranging from 30 to 75 per cent of the total fat stock. Among the possible substitutes for tallow are mixed fatty acids of appropriate character and titre.

Rosin should be the W. W. (water-white) or other lightcolored grade. From five to thirty percent of the total "fat" charge is noted in the literature, usually not less than 15 to 20 percent being used when castor oil is omitted. Excess rosin favors the production of a tacky soap and one that darkens with age.

Castor oil, like rosin, undoubtedly favors transparency. On the other hand it decreases the total lathering properties, promotes softness and stickiness, and is liable to rancidification unless it is properly saponified. For preference, an oil of the first pressing should be used. Other soft oils may also be considered by referring to any standard text on potash soaps, but in general they are not so suitable as castor oil or castor oil fatty acids and have, moreover, much the same disadvantages.

Coconut oil, palm kernel oil and the corresponding fatty acids, are all desirable admixtures from the point of view of ready solubility and quick lather formation, because of their high content of lauric and myristic acids. They are included in published formulae in quantities ranging from a scarcely adequate two percent to the quite excessive 55 percent. Probably the optimum proportion would range from about 10 to 35 percent. A first-grade Cochin coconut oil was at one time preferred but nowadays very suitable standardized fatty acids are available.

Main Requirements

THE Henkel patent previously mentioned refers to the use of olive oil, which of course contains over 80 percent oleic acid. It is obvious that many other oils and their f.a. derivatives might prove quite suitable for use in the manufacture of transparent soaps. In all cases, however, there are three main requirements to be borne in mind: firstly, the promotion of transparency or, to put it the other way round, the minimization of the risk of opacification; secondly, the production of a finished soap of acceptable consistency and texture; and, thirdly, the necessity of preserving the normal washing properties of a good toilet soap. This third point is particularly important because several published formulae sacrifice function to appearance—resulting in products that certainly exhibit transparency but, so far as performance goes, are not really soaps at all.

A brief reference ought here to be made to the subject of dermatological action. While it is known that free rosin may act as a sensitizing agent or even as a primary irritant on some individuals, I know of no such disadvantage attaching to rosin soaps. Coconut oil soaps are irritant to some persons, but not in the proportions normally found in transparent soaps. Castor oil soaps, on the other hand, are extremely mild and the oil itself is used as an emollient.

The most important of the non-fat materials in producing a first-quality transparent soap is un-

*Editor of *Soap, Perfumery & Cosmetics,* London. Consultant-Perfumer.

doubtedly alcohol. At the time of writing I would go so far as to say that no truly transparent soap of high f.a. content can be made without it, although this statement may not be valid when new mechanical and possibly chemical treatments are eventually introduced. The curious fact that, so long as alcohol remains in the soap, the latter remains cloudy has long been noted. All of the alcohol used in the process evaporates during the manufacturing and the maturing periods. As the last traces of alcohol disappear, the soap attains its maximum clarity, although this is not fully apparent until the external "skin" of the cakes has been cleaned up by rubbing lightly with an alcohol-soaked sponge or cloth.

In the U. K., industrial methylated spirits (I.M.S.) consisting of a mixture of five vols. wood naphtha with 95 vols. ethyl alcohol, is used for this purpose. In the United States, the government also permits the use of a specially denatured alcohol for making transparent soap. This grade, SD.3A consists of ethyl alcohol containing five per cent of methyl (wood) alcohol as the denaturant.

The presence of glycerin favors transparency. Where the glycerin liberated during saponification is retained in the soap, further additions are usually unnecessary. In other cases—as, for example, where rosin is used with distilled fatty acids—a carefully regulated proportion of glycerin may often be advantageously added. Glycerin improves the emollient "feel" of the soap, but excessive amounts may cause a sticky exudation on the surface of the soap cake.

Use of Sugar

SUGAR solutions have been used to replace alcohol and glycerin in the production of second-grade transparent or translucent soaps. Sugar softens the resulting soap and is said to be best used with a charge containing 25 per cent coconut oil and a high percentage of tallow. Excessive use of sugar also tends, as in the case of glycerin, to cause "sweating." Sugar is not the most desirable of materials from the dermatological point of view.[3]

Sorbitol, if its price allowed, could no doubt be used to bring about transparency. Alcohols other than ethyl alcohol and industrial spirit, as well as various glycols and glycol derivatives, have been suggested for use in this respect, but the idea of utilizing them never seems to have gone beyond the purely experimental stage.

Formulations

WE must now diverge from consideration of the main factors affecting transparency to follow some typical formulations through the manufacturing and finishing stages, for it is only by so doing that we can effectively deal with such matters as drying rates and mechanically-provoked phase changes, as and when they arise.

Transparent soaps may be made by suitable adaptation of any of the conventional means of soap manufacture. Bergeron[15] quotes an analysis of "Pears' Soap" showing 86 percent anhydrous soap, 5.5 percent glycerin, eight percent perfume and water, and 0.32 percent free salt. A more modern analysis carried out in 1951 at my request showed 81.2 percent total fatty acids, 9.8 percent alkali as Na_2O, 6.3 percent moisture, three percent glycerin, and a titre of 37.7°C. While I cannot vouch for these figures, they obviously indicate a soap ranking with ordinary milled toilet soaps in f.a. content, and are in this respect significantly different from a published Indian standard for transparent soaps, which calls for a product of not less than 50 percent f.a., not less than three percent glycerin, not more than 15 percent sugar, and not more than 25 percent rosin (based on total f.a.)

It is obvious that a first-grade transparent soap of high f.a. content cannot be made by ordinary cold process or semi-boiled methods, although the latter is perfectly satisfactory for the production of second-grade soaps, as will be seen later. The settled or fitted process is used, the resulting clean soap being dried and then dissolved in industrial spirit (for the use of which an official permit is in most countries required.) Thomssen and McCutcheon suggest that the freshly made and finished full-boiled soap should be pumped into a jacketed vessel equipped with steam coils, the excess water being evaporated until it reaches the required f.a. concentration.[16] Alternative drying methods and equipment may of course be used at the finishing stage, including chilling roll and spray-drying units. An ordinary soap-drier and drying chamber unit should be quite satisfactory for the purpose. The dried soap is mixed intimately with the alcohol in a totally enclosed, hooded vessel, and the warm solution allowed to settle. According to Hilditch,[17] certain impurities, including small quantities of

Table 1. Kettle Charges

Materials	Parts by Weight			
	A	B	C	D
Tallow No. 1	40	40	65	40
Coconut Oil	35	35	5	35
Castor Oil	—	10	—	25
Rosin W. W. or W. G.	25	15	30	—
Alcohol, denatured	40	60	40	40
Sugar (crystal)	20	2	—	10
Perfume and color	q.s	q.s	q.s	q.s
NaOH lye, 38° Be	q.s	q.s	q.s	q.s
Water, distilled	20	5	—	15
Glycerin	—	—	—	25
Reference No.	(2)	(13)	(2)	(21)

Notes: The amount of caustic lye has not been indicated as this should be determined from the saponification value of the fat stock and adjusted as necessary. Sugar may be made up as a 1.1 syrup with water. The reference numbers relate to the corresponding numbers listed under References at the end of the article. All these formulae are for semi-boiled transparent soaps.

sodium chloride and carbonate, separate at this stage and the clear solution is drawn off, the bulk of the alcohol evaporated and condensed for further use, and the concentrated alcoholic solution run into shallow frames. After standing until firm the blocks of soap are placed on trays in a stove and exposed to a current of air at about 30-35°C., which removes most of the remaining alcohol; the entrained alcohol vapor is recovered by passage through a refrigerated condensor, or better, by scrubbing the emergent air through water and fractionating the scrubber liquor.

In actual fact, as several other writers have pointed out, the best "frames" for this type of soap are long, metallic moulds of elliptical or other suitable cross-section. The surface area at the top of such moulds should not be appreciably bigger than the size of the cakes required, allowing for cutting and shrinkage, as efficient supercooling is not ensured in larger moulds. Attention should be paid to the smooth welding of these tubular moulds, as prominent seams cause not only an unsightly ridge down the bars but also induce deformation during shrinkage. Tubular moulds should be kept warm before use in order to prevent the formation of bubbles but, once filled, they must be permitted to cool rapidly in a suitable cooling apparatus. No information is available, unfortunately, on the subject of optimum cooling temperatures. When cold the soap bars are ejected from the moulds. It is sometimes advisable to leave them for a day or two to shrink sufficiently to be readily ejectable.

Cutting Bars

SPECIAL care must be taken, owing to the brittle character of the bars, during the process of cross-cutting them into tablets. Fisher (*loc.cit.*) says that a band-knife with a sharp edge is preferable to the conventional cutting wire. A loss of about 25 per cent must be allowed for on each cake, he considers, due to the subsequent evaporation of spirit and the necessary planing of the cut surfaces. The plane iron, whether part of a hand tool or of an automatic machine, must be kept quite true and sharp, as any irregularities will score the surface of the tablet, and these marks will persist after stamping. The planing is done one week after cutting and the tablets are laid out on lath trays with at least one quarter inch between each tablet. At the end of a further week the tablets are stamped, and again spaced out as before and placed in store for two or three months in a ventilated room at 86-90°F., which is virtually the same temperature as that mentioned by Hilditch. The "ventilated room" will, in modern practice, be an efficiently regulated alcohol recovery stove.

If, adds Fisher, the temperature of the fats was correct in the original mixing, the tablets will shrink very gently in the center, and develop that well-known "sunk oval" shape, leaving the edges of the tablet about the same thickness as they were when stamped. Sometimes the edges are trimmed by means of a cutting machine. At the end of the maturation period, the now transparent tablets are polished with alcohol by hand or by being passed through an alcohol-washing machine. They are then air-dried and wrapped.

Several brands of transparent soap are still made by the semi-boiled process. In view of the nature of transparent soap and the desirability of ensuring its maximum clarity, it is extremely important when using this process to use only the best grades of raw materials. Only distilled or at least de-ionized water should be used, as calcium soap formation must be carefully guarded against. Sugar and glycerin should be lime-free. Sethumadhava Rao adds that oils and fats showing signs of rancidity should be avoided at all costs. If tallow used has been in stock for some time, its free fatty acid content should be determined and neutralized before use. If it exceeds 12 to 15 percent, this cannot be done with good results. Coconut oil should be free from off-odors, bad color and free fatty acids. Castor oil should, as far as possible, be of first run and clear. Rosin should preferably be of W. W. variety, although darker varieties are sometimes used.

The major alkali employed is caustic soda solution of nearly 38°Be', though a small portion of this is sometimes replaced by caustic potash solution of 44°Be'. Regarding the purity of the alkali, it is essential that it should be free from heavy metal contamination. It is advantageously prepared in iron tanks with welded seams. The tanks should always be kept covered in order to prevent the lye from absorbing atmospheric carbon dioxide. Before use, the caustic lye should be cooled down, allowed to settle, and filtered through glass wool.

Table 2. Kettle Charges

Materials	Parts by weight			
Tallow No. 1	34	53	50	60
Coconut oil	33	35	30	8
Palm kernel f.a.	—	—	—	10
Sesame oil	—	—	5	—
Olive oil	—	—	—	12
Castor oil	33	8	10	10
Rosin, W.W. or W.G.	—	4	5	—
Glycerin	—	13	5	2.5
Alcohol, denatured	25	44	60	60
Soda ash	3	—	—	—
Sodium silicate, 26°Be	10	—	—	—
Sugar (crystal.)	20	25	—	—
Perfume and color	q.s	q.s	q.s	q.s
NaOH lye, 38°Be	q.s	q.s	q.s	q.s
Water, distilled	20	15	—	—
Reference No.	(2)	(16)	(18)	(12)

Notes: Formulae E and H may be adapted for the making of soaps by the full-boiled, fitted process—the filling materials being added at the crutcher stage. For other types of settled soap, please see text.

After all these operations and before use, the correct strength of the lye should be measured. If it is anywhere below 36°Be', it is unfit for use and the strength should be brought up to as near 38°Be' as possible in the case of caustic soda and 44°Be' in the case of caustic potash.[18]

Semi-boiled Method

FOR the production of transparent soap by the semi-boiled method the materials are somewhat limited so far as fats are concerned. Tallow, bleached palm oil, coconut oil, castor oil, and rosin will cover the requirements for the soap proper, although suitable alternatives may also be considered. For fillings and aids to transparency one may mention sugar, glycerin, spirit, sodium and potassium carbonates, sodium chloride and sodium silicate.

The manufacturing process for these semi-boiled transparent soaps is reasonably straightforward. The tallow, coconut oil and any other fats, with the exception of castor oil, are melted and strained into a jacketed kettle and held at a temperature of 140°-150°F. The clean castor oil is added just prior to saponification, in order to prevent any tendency for it to darken. The lye is then run in and the mass stirred and left for about an hour or two to react, with occasional stirring. At this stage the filling solutions, etc., are added to the kettle contents at the same temperature as the soap itself. Silicate and soda should precede the sugar solution, if any. Live steam is admitted and the soap thoroughly crutched. The spirit is next added cold and care should be taken in keeping the temperature as low as possible. The optimum temperature is that reached by the exothermic saponification process. If the batch gets too hot there is a tendency for a kind of nigre to form and to become distributed throughout the batch. Testing for alkalinity is carried out in the usual way and any necessary corrections made by adding coconut fatty acids or alkali. After any such adjustments have been made, a further test should be carried out for transparency. A sample cooled rapidly on a glass plate could set to a hard transparent mass. These tests should be made in order given, as the solidified mass will not usually exhibit its maximum transparency unless the alkalinity of the soap has been properly adjusted. When the batch is in a satisfactory state, the dissolved dyestuff is crutched in and the perfume added last of all. Even without dyestuff, most of these soaps are of a pale to dark straw color and good appearance and may not need the addition of a dye. The soap is then run off into small caulked frames or metal moulds, and subsequently treated in much the same fashion as the first-quality soap described above.

It is necessary to ensure that these soaps have properly solidified in the center of the frame, as they remain liquid for a while at quite low temperatures. After cutting, the rough cakes of this type of soap are planed into a smooth shape and stored in open racks or in a drying chamber not heated above 75°C.

Semi-boiled transparent soap cakes can be stamped into almost any shape if dried slowly, but if dried rapidly or to excess they become brittle and more liable to fracture and cracking. They usually improve in quality if stored in a warm, dry place for a month or two after planing and then stamped.

Freshly-made scraps may be returned and melted up in the neat batch, but old and dry scraps are fit only for boiling up in a low-grade soap.

Complete Saponification

CARE should be taken in ensuring that saponification has gone to completion. Free fat will always mar the translucency of the finished soap. It is better to err on the side of a reasonable percentage of free alkali. Problems of shrinkage and deformation, when alcohol is used, may often be solved by slowing down the rate of drying, and by moulding and stamping the cakes into elliptical, round or other suitable shapes, in which concavity will not distort straight edges in an unsightly fashion. It is usually profitable, moreover, to pay as much attention as possible to the finer arts of planing, stamping, trimming the edges of tablets and polishing them with alcohol before packing.

Some typical kettle changes are given in Tables 1 and 2. It goes almost without saying that a cor-

(*Turn to Page* 114)

Table 3. Loss of weight and transparency development

Time in days	Weight of the original soap cake (gms.)	Loss of weight (gms.)	Percentage loss on the weight of the original soap cake
0	65.94	—	—
1	62.00	3.94	6.00
4	57.12	8.72	13.3
5	56.13	9.81	14.9
6	55.20	10.74	16.3
8	53.71	12.23	18.6
9	53.22	12.72	19.3
12	51.53	14.41	21.9
18	48.84	17.10	25.9
29	45.97	19.08	30.3
30	45.81	20.14	30.6
32	45.47	20.47	31.1
34	45.16	20.78	31.6
41	44.30	21.65	32.9
47	43.90	22.04	33.5
55	43.45	22.49	34.2
71	43.12	22.82	34.7
77	42.82	23.12	35.1
80	42.82	23.12	35.1
84	42.82	23.12	35.1

Reference 13. Table showing that a semi-boiled transparent soap made with 60 per cent by volume of alcohol, based on the total of the oils and fats used, loses about 35 per cent of its weight on exposure to the atmosphere. The loss of weight extends over 12 weeks, by which time the soap has matured and attained its maximum transparency. Excess castor oil, rosin or sugar may provoke "sweating" during this period, and white encrustations may appear due to excess alkali.

Better Detergency Evaluation

Newer, more accurate radiological techniques to evaluate cleaning procedures are rapidly replacing older and less sensitive methods.

By E. H. Armbruster and G. M. Ridenour*†
School of Public Health University of Michigan

RADIOLOGICAL tracer techniques are quite rapidly replacing the older conventional means of evaluating cleaning procedures because they offer sensitivity and accuracy heretofore unattainable (1). The object of this paper is to present two types of easily prepared substances capable of acting as radioactive indices of soil removal.

Experience in this laboratory in tagging bacteria has shown P^{32} to be an ideal tracer isotope. Phosphorus-32 is an inexpensive pure beta emitter of 1.7 mev and relatively short half life. This combination of properties is advantageous because: (1) ordinary radiological apparatus is all that is needed to measure the radioactive isotope, (2) required measuring apparatus is easily shielded from beta background, (3) energy level is high enough so that absorption does not become a factor in normal soil work, and (4) the half life of 14.3 days permits work with one sample over a reasonable period of time, yet is short enough to minimize decontamination problems. The preparation of P^{32} as a tracer element in two different forms will be described, namely (1) in radioactive colloidal chromium phosphate and (2) in radioactive bacteria.

Chromium phosphate, when properly prepared, is a very inert substance, insoluble in alkalies, acids and organic solvents. It is also easily prepared in the radioactive colloidal state with phosphorus-32 as the radioactive element in the compound.

The radioactive compound is prepared in the colloidal form as follows: One millicurie of P^{32} as H_3PO_4 (as obtained from Oak Ridge) is added to 50 ml. of M/10 $Cr(NO_3)_3$. Then add 40 milliliters of M/10 Na_2HPO_4 to the sample while mixing and allow the resultant mixture a reaction time of 15 minutes, interspersed with occasional shaking. Separate the insoluble material by centrifugation. Wash the precipitate once with 25 ml. of cold distilled water and recentrifuge for final separation. Dry the centrifuged material under an infra red lamp and then heat to 450°C for 12 hours in a muffle furnace.

It is usually convenient to carry out this operation with the material still in the centrifuge tube.

The ignited precipitate has a red brown color at this point. Weigh the material and place it in a 100 ml. wide-mouth Pyrex bottle, half filled with ¼ inch stainless steel balls. Grinding in a ball mill for 48 hours is usually sufficient to pulverize the chromium phosphate to colloidal size. Most effective grinding is accomplished when two to three ml. of water are added prior to the start of the operation. Recover the chromium phosphate from the grinding jar with several 10 ml. washings of buffered distilled water. The total volume should give a final concentration of five mgm of colloid per ml. of water dispersant. The buffered water is prepared by adding one ml. of Sorenson's pH 7 phosphate buffer to 100 ml. of distilled water.

The addition of 50 mgm of carboxymethyl cellulose to 100 ml. of buffered suspension will function as an excellent stabilizer and aid in holding the chromium phosphate in colloidal suspension for several days. At this stage the suspension resembles muddy water in appearance.

When the tagged chromium phosphate is to be used in non-aqueous soils, wet grind it in the presence of a small amount of the soil in place of the water. An alternate method, applicable to greases, is to dry grind for 72 hours and then triturate with the grease in a mortar.

The paper strip electrophoresis method was used to show that chromium phosphate particles prepared by the above method are both insoluble and uncontaminated with any free P^{32}. All samples re-

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ported here were subjected to an applied voltage of 30 volts per centimeter for a period of one hour at pH 7. After the strips were dried, measurement of the P^{32} migration was made by simple radiological methods. This consisted of locating a Geiger tube directly behind a narrow slit in a lead shield, past which the paper strip was slowly drawn at a uniform rate of speed. A recorder attached to a count-rate meter produced a continuous graph of the location and intensity of radioactive material at every point along the length of the strip.

Graph I illustrates the characteristic non- migratory pattern obtained with the chromium phosphate suspension prepared as previously described. It appears from this pattern that the radioactivity is both insoluble and tightly bound to the colloidal micelle, since there was no migration from the point of seeding on the strip. Graphs II and III are shown to provide additional proof of this assumption. The peak in Graph II is due to the phosphate ion migration as prepared from P^{32} tagged phosphoric acid in distilled water. The free phosphate ion migrated seven centimeters toward the positive electrode under the conditions used in this series of tests. When free tagged phosphate ions were added to the tagged chromium phosphate in the same proportion as in I and II the resulting curve III was a composite of these two. Suspensions aged for several weeks in a pH 7 buffered solution produced curves identical with Graph I showing that the substance was stable in its original form and quite insoluble.

When the chromium phosphate was suspended in a N/10 acid or alkali, there was, upon standing, a visual breakdown in the colloidal nature of the material, but no significant migration or separation was detectable with the electrophoresis technique. Similar results were obtained when this material was suspended in 0.5 percent of an alkaline detergent and tested at a pH of 11.5.

These results show that the P^{32} is tightly bound into the structure of the chromium phosphate molecule and also that properly prepared chromium phosphate is free from any excess ionic tagged phosphate.

Because of its stability, ease of handling and versatility, radioactive chromium phosphate lends itself to a variety of tracer index applications.

Radioactive Bacteria

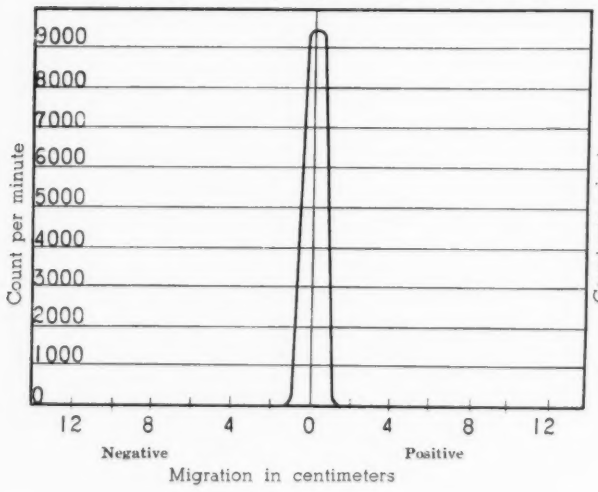
SEVERAL years ago the authors described the use of various strains of bacteria with a radioactive isotope to be used as an index of soil removal from various surfaces including cloth, metals, china, plastics, etc. (2,3,4). Phosphorus-32 was used as the isotope of choice for tagging the bacteria since, in addition to its radioactive properties, phosphorus is readily utilized and required by these organisms in their metabolic processes for the production of protoplasm.

Preparation of the tagged bacteria involves the following steps:

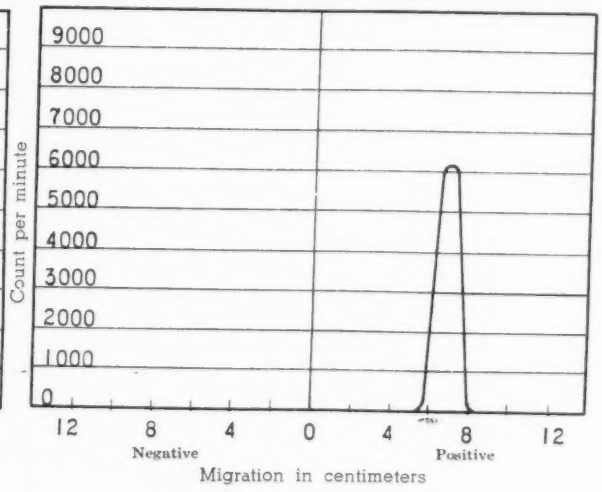
Seed the desired test organism into a tube of nutrient broth consisting of two percent tryptose, 0.5 percent sodium chloride and sufficient phosphorus-32 in the form of phosphate to give a final concentration of 10 microcuries per ml. After incubation, separate the cells from the broth by centrifugation. Suspend the cells in approximately 20 ml. of cold buffered physiological saline and then recentrifuge. Two such washings are sufficient to free the cells of the unused phosphate which was not metabolized. Resuspend the bacteria in a small amount of saline to serve as a concentrated cell suspension. Dilutions of this cell suspension can then be used as a soiling medium for measuring the efficiency of detergents and washing processes.

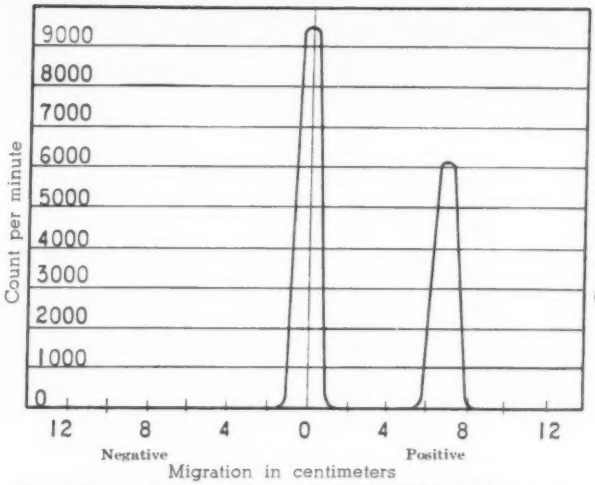
It should be noted here that certain species (eg. *E. coli*) of organisms are quite easily removed from a surface while other species of organisms (eg. *M. aureus*) are exceedingly difficult to remove under the same conditions. This pro-

Graph I. Migration of phosphate ion from $CrPO_4$ sol.

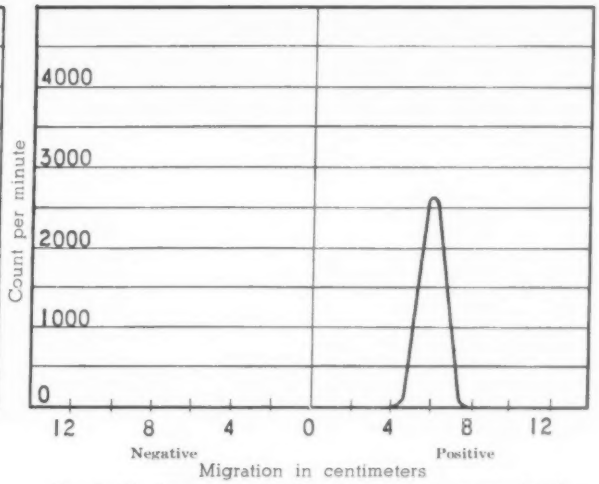


Graph II. Migration of phosphate ion in H_3PO_4 sol.





Graph III. Migration of phosphate ion in $CrPO_4$-H_3PO_4 mixture.



Graph IV. Migration of phosphate ion in sterile broth.

perty is advantageous since it is possible to select the index which will show maximum differences for the particular process under investigation.

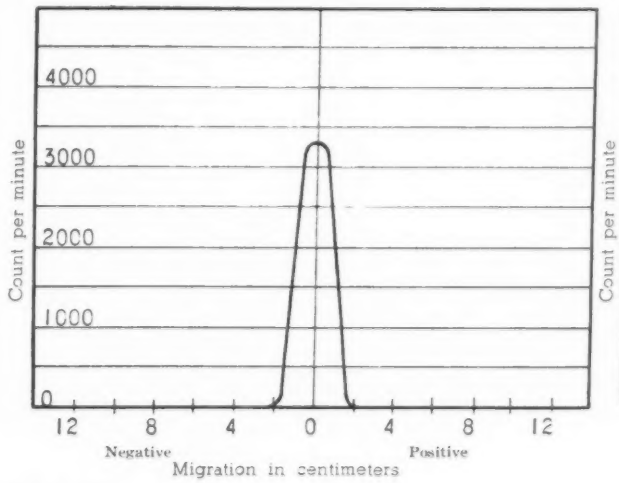
The tagged organisms can also be mixed with various types of soils and thus serve as an index of the amount of soil remaining after a cleaning process.

Reliability of radioactive phosphorus tagged organisms in this application obviously depends on (1) washing the bacterial cells free from loosely bound or unabsorbed isotopes, and (2) irreversible utilization of the radioactive material into or on the chemical structure of the organisms. Again, paper strip electrophoresis offered the simplest method of demonstrating the phosphate stability of bacteria so tagged. The results of such tests are shown in Graphs IV through VI.

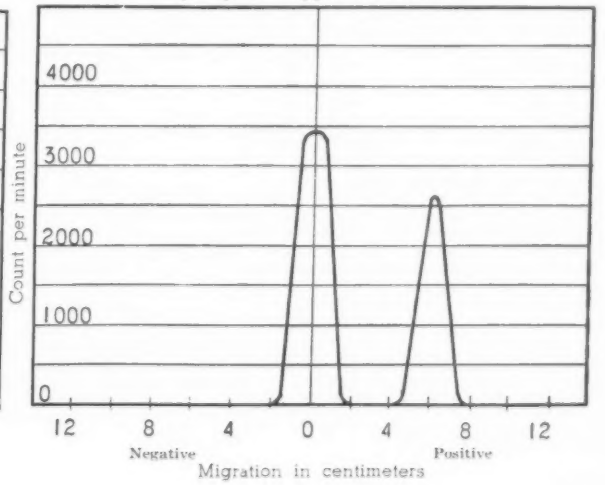
Graph IV presents the results when the tagged phosphate was mixed with sterile nutrient broth and then tested according to the above procedure. It can readily be seen that the radioactive phosphate ion migrated as a homogenous substance and also that there were no side reactions or insoluble substances formed by the PO_4 and broth. The results obtained with the washed cell suspension are presented in Graph V. In this case there was no appreciable migration of radioactive material, proving that the radioactivity is tightly bound to the organism.

Graph VI is typical of the results obtained when $P^{32}O_4$ was mixed with the radioactive washed cell suspension. After electrophoresis two sharp distinct bands of radioactivity were present on the paper strip. The one peak showing no appreciable migration corresponds to that obtained with the cells alone (Graph V) and the second peak corresponds with that obtained with radioactive phosphate (Graph IV). The results from this set of graphs show that the free PO_4 can be readily separated from the *M. aureus* and identified and also that the radioactive P^{32} is tightly bound to the cells.

Graph V. Migration of phosphate in M. aureus suspension.



Graph VI. Migration of phosphate in mixture of H_3PO_4 and phosphate tagged M. aureus.



When the twice washed cell suspension was allowed to stand at room temperature for 24 hours prior to electrophoresis, a measurable separation of tagged phosphorus was detected. This probably is due to the action of dephosphatase enzymes produced by the organism. Paper strips that were seeded with the fresh suspension and dried immediately could be held for a week or more with no such breakdown being observed. These observations indicate that a soil using radioactive microorganisms as a tracer index must be used immediately for accurate results since storage of the soil will impair the accuracy of the test. However, if the soiled material is dried soon after application of the radioactive tracer, storage for several days will not affect results.

Conclusions:

TWO types of easily and inexpensively prepared materials are described which are suitable for use as soil tracer indices. One, a radioactive chromium phosphate sol, is highly stable, insoluble in alkalies, acids, and organic solvents. The other, a bacterial suspension tagged with radioactive phosphorus is likewise adaptable to use as a soil tracer. The stability of each with respect to bonding of radioactive phosphorus to the soil, and the freedom of each from free phosphorus is demonstrated by electrophoresis measurements.

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SYNTHETIC

and Emulsifiers

Part I of Four

THE periodic revision of this table of American trade name products in the field of detergents, emulsifiers and other surface active agents seems to have a useful purpose from the many kind words received from those who use it. The writer is most happy again to present a revised list based for the most part on a continuous file system on the subject plus an up to the minute check by the producing companies themselves.

Just how important these introductory remarks are to the listing is unknown. They are very likely little read by those "in the trade" so to speak. However, to those who see this listing for the first time these remarks should in some way be useful in reflecting the aim, purpose and limitations of the listing. In addition it is felt that a short synopsis of the growth in the field, both in volume and technical direction should prove of general interest.

In the first place, the change in title should be noted. Formerly called "Synthetic Detergents-Up-to-Date"—the list included many products only remotely connected with detergency such as sulfonated castor oil, etc. Probably the best descriptive title would have been "Surface Active Agents." However, such a change in title would probably mislead those who have been using these listings over the past number of years. To maintain a progressive and more exact view point while still maintaining a connecting link with the past, the title has been changed to "Detergents and Emulsifiers." These two items pretty well cover the extreme functions of surface active agents as they apply to cleaning compositions. There is plenty of elasticity in definitions—some detergents really just function as emulsifiers—as, for example, in the socalled "high detergent" motor oils; and some emulsifiers may really be classed as detergents when used to remove oil from metal surfaces. Strict scientific definitions, differentiation of the functions of these products are useful in the development of new products, but have little bearing on the applications of the products themselves and therefore are treated as of secondary importance here.

For this reason the column listing principal uses can only indicate classification of the product and often is not as helpful as might be desired. The term "emulsifier", for example, does not tell whether it is an O/W (oil in water) of W/O (water in oil) type product. A "detergent" may function with profuse foam or hardly any. For this reason it is helpful in many cases to examine the statement under "remarks." This often provides a clue as to just what class of product is involved. For example a product listed as a detergent and emulsifier is a bit of a puzzle until identified as a dry cleaning aid. It is

DETERGENTS

—*Up to Date*

By John W. McCutcheon

then seen that it is an emulsifier first and a detergent second.

Selected Criteria

THE criterion of selection of products for inclusion rests on two main points. They must be surface active and commercially available in the U.S.A. There is some elasticity to this classification, however, which may be worth a word of explanation. For example, some foreign made products are shown. These are products for the most part that are available for import through various domestic channels. There is no attempt to make this list complete on a world-wide basis. Obviously, any foreign product could be imported under certain conditions, although generally it is uneconomical to do so. Compounded products are generally not listed since they are sold direct to the consumers and the nature of their composition usually is not disclosed. Products of this nature are legion and it would serve no useful purpose to include them. However, it is desirable that large industrial producers of such detergents be represented and in a few cases, border line products of this nature are so listed, particularly if the product is nationally distributed.

Retail products are also not generally shown, unless the product has national distribution. Even then no attempt has been made to make this listing complete in that field.

Products of the same company bearing the same generic name are also grouped together as far as possible. This reduces the space and simplifies the presentation. In such cases the key difference between products is generally noted under the remarks.

About 150 companies are listed alphabetically on the last page. Many of these companies, however, do not represent prime manufacturers. Some companies, for example, are sales agents for one or more products of a prime manufacturer representing him in a field in which he has no sales experience. A company may make an emulsifier for its own captive use in a food product and also sell the same product to a second company who has exclusive sales rights in non-food applications.

Some companies make one or two basic type materials and purchase others from prime manufacturers to round out their customer service. A few purchase their products packaged and labelled by the prime manufacturer. In general, probably not over 80 of the listed firms manufacture their own entire line of products, and of these, only about 30 or 40 make a broad class of compounds servicing various industries.

Certain firms are not included here since their entire production is captive. Products of such companies fall generally into two types—soaps and petroleum sulfonates. As manufacturers, these firms are listed in the Tariff Commission Report as producers. Just how much of the petroleum sulfonate market is so produced captively and how much is represented by the trade name products listed here, is unknown. It would be a considerable portion however and is placed by the writer at probably 50 per cent of the entire 1954 production of petroleum sulfonates.

In addition to the above, certain companies included in this list may not show their entire production of surfactants as trade name products if such production includes a captive use, as for example a monoglyceride for use in shortening. When these facts are considered and evaluated somewhat quantitatively it is estimated that the list of products presented here probably represents about 825 million pounds of 100 per cent active surfactants out of some 900 million shown as produced in 1954. However, if the sales tonnage of all these products were listed, reduced to a 100 percent active base, they would very likely exceed this figure due to the overlap caused by those companies who purchase from a prime manufacturer for re-sale. There is no easy way to estimate just how much this overlap would be except through a special market study. The writer places this total tonnage somewhere between 1.0 and 1.1 billion pounds.

The 1954 estimate of bulk sales of synthetic detergents is

placed at over 2.1 billion pounds and represents 60 percent of the total soap and detergent production. The 1951 estimate, as previously reported, was 1.25 billion pounds, or 35 percent of total soap and detergent production. These figures prove that detergents are showing continued progress and the expected levelling off in detergent sales and output is not yet a fact.

Retail products account probably for 500 million pounds of 100 percent active detergents. Very likely 80-90 percent are represented by a handful of well known nationally advertised brands based primarily on sodium dodecylbenzene sulfonate and a small but still substantial amount of alkyl sulfate from fatty alcohols. This leaves about 500 million pounds of 100% active material for industrial use. The large growth in this latter field has been in the emulsifiers — particularly the monoglycerides, the nonionic ethylene oxide condensates of alkyl aryls, for use principally in agricultural sprays and petroleum sulfonates used principally in lubricating oils, etc.

An estimated 20 million pounds of fatty alkanolamide condensates each year are finding their way into retail detergent products as foam stabilizers. Most of the expansion to date in this field has been in new applications, such as in oil well drilling, asphalt treatment, etc., or in increased use in an established field such as in the more widespread and more concentrated use of monoglycerides in shortening and other food products. For these reasons production will probably continue at a steady upward pace. It is not unreasonable to estimate that the industrial use of detergents and emulsifiers may reach close to a billion pounds by 1960.

In regard to retail detergent sales,—we must examine the soap picture by classes of compound—namely (1) flakes and chips, (2) laundry bars, (3) toilet bars and (4) powders. It is in the powder field that up until the present detergents have had their greatest success. It is now beginning to be difficult to find a powdered soap product on the grocer's shelves!

Table I. Detergents and Emulsifiers—Estimated 1960—Annual Production in Millions of Pounds of 100 Percent Active Material.

Industrial production based on 10 percent per year increase over estimated 500 million pounds for 1954	900
Retail sales, based on approximately five percent per year increase due to use and population growth on 500 million pounds for 1954	700
Increase due to displacement of soap	
(a) Powders and laundry bars on basis of 25 percent active per pound of packaged soap	200
(b) Toilet bars, on basis of 50 percent active per pound of bar displaced	100
(c) Chips and flakes on basis of 25 percent active per pound of soap displaced	25
Total	1,925

Decline of Soap

A BRIEF history of American powder use is enlightening. It all began about 1930 when acceptable spray dried soaps came into use. Laundry bar soap immediately began to be displaced. In 1939, sales of laundry bar soaps represented a total of about 1.2 billion pounds and powders 900 million pounds. By 1947 this picture was more than reversed. Soap powder sales were over 1.5 billion pounds and bar laundry soap sales had declined to 0.8 billion pounds. This was before detergents started to be an important factor. After 1947, soap powder sales began to feel the impact of powdered detergents as a competitor and, like the laundry bar, began to be displaced. By 1954, soap powder use had fallen from over 1.5 billion pounds to about one half billion pounds. At the same time, laundry bar soaps also showed a continued fall from 800 to 300 million pounds. Thus, soaps lost approximately 1.3 billion pounds of annual production to syndet powders in the period 1947 to 1954. Actually syndets did better than this, since total soap and detergent production climbed steadily during these years from about 2.8 to 3.5 billion pounds annually. A graph of this data would indicate that soap in powder and laundry bar form will be obsolete by 1960. If so, it represents a further gain for syndets of 0.8 billion pounds representing some 0.2 billion pounds of 100 percent active detergent material.

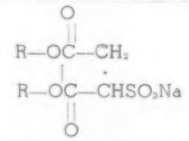
Toilet soap bars continue to represent a steady market of about 0.6 billion pounds per year. The writer feels that this market is not secure to soap. Various present materials of interest to such products are being tried. It is quite conceivable that some of these may prove successful. The writer estimates an inroad into this field by 1960 of some two million pounds representing another one million pounds of active material.

The soap chip and flake field has been relatively small since the advent of powders. In 1939 and 1947 it was about 0.4 billion pounds. In 1954, it was only 0.2 billion pounds. This may be reduced to 0.1 billion by 1960 if present trends continue, representing a further increase of detergents by about 0.02 billion pounds.

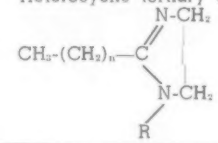
Totalling the above figures the retail and industrial detergent sales figure would be estimated as shown in Table I.

One change in terminology to be noted since the 1952 review, is the use of the term "detergent" to signify synthetic detergent and to exclude soap. This is not scientific but has become of common usage and must be accepted to avoid confusion of thought.

Many thanks are due to the cooperation of the producing companies who checked the draft copy and offered valuable suggestions.

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Acco Emulsifier #5	Amalgamated Chemical Corp.	Polyethylene glycol ester of fatty acids	Emulsifier	Paste	100%	Nonionic	Emulsifier for cosmetic use
Acidol 25 A	Onyx Oil & Chemical Co.	Salt of a fatty acid tertiary amine	Wetting	Liquid	25%	Cationic	Textile processing, electroplating
Acidolate	White Laboratories, Inc.	Sulfonated oils, etc.	Detergent	Liquid		Anionic	A non-irritating hypoallergenic skin detergent. Ideal cleanser for fat-soluble and water-soluble soil. Indicated for the removal of grease, ointments, and in dermatitis conditions, e.g. acne vulgaris, ringworm of the scalp, etc.
Acidose	Turco Products, Inc.	Alkyl aryl sulfonate	Detergent Wetting	Powder	15%	Anionic	Car washing and metal pickling solutions
Acto 450 500 600 630 700	Esso Standard Oil Co.	Alkyl aryl sulfonate Mol. Wt. 465-480	Emulsifying	Paste Liquid	70% 45%	Anionic	A sodium sulfonate mineral oil mixture. Percent active is designated by first two numbers. Emulsifying base for rust preventives, cutting oils, fat splitting, emulsion breakers, etc.
Actusol	Du Bois Co.		Emulsifier	Liquid			A water soluble grease emulsifier for the metal industry
AD (retail)	Colgate-Palmolive Co.		Detergent	Bead		Anionic	A low sudsing all-purpose detergent for household use
Advawet 10	Advance Solvents & Chem. Corp.	Alkyl aryl polyether alcohol	Wetting Emulsifying	Liquid	100%	Nonionic	An emulsifier for latex paints, water base inks, glues, galvanizing fluxes, etc.
Advawet 25	Advance Solvents & Chem. Corp.	Sodium salt of a sulfonated mineral oil	Wetting Emulsifying	Paste	40%	Anionic	Emulsifier for agricultural sprays
Advawet 33	Advance Solvents & Chem. Corp.	Polyglycol ester	Wetting Emulsifying	Liquid	100%	Nonionic	Developed for emulsion paints
Advawet X-212	Advance Solvents & Chem. Corp.		Emulsifier	Liquid			Developed to reduce the viscosity of plastisols thereby reducing the danger of entrapping air
Aerosol AY	American Cyanamid Co.	Diamyl ester of sulfosuccinic acid $C_5H_{11}COOCH_2CHSO_3NaCOOC_5H_{11}$	Wetting Dispersing	Solid	100%	Anionic	Lump form water soluble; best with electrolytes
Aerosol C-61	American Cyanamid Co.	An ethanolated alkyl guanidine amine complex	Wetting Dispersing	Paste	80%	Cationic	A pigment dispersant and wetting agent in acid solutions for use in textile, paper and adhesive industries
Aerosol MA	American Cyanamid Co.	Dihexyl ester of sodium sulfosuccinic acid	Wetting Dispersing	Solid	80%	Anionic	Wax like solid, hygroscopic, less soluble than Aerosol OT, low foaming. Use: dry cleaning, etc.
Aerosol OS	American Cyanamid Co.	Isopropyl napththalene sodium sultonate	Wetting	Powder	95%	Anionic	Hygroscopic
Aerosol OT	American Cyanamid Co.	Dioctyl ester of sodium sulfosuccinic acid	Wetting Dispersing	Solid	100%	Anionic	Wax like, hygroscopic solid, water soluble to form gel. at 50%. Best wetting agent of series but least stable. Also available as a 70% water-solvent solution, and a 25% clear water-solvent solution.
Aerosol SE	American Cyanamid Co.	Stearamidopropyldimethyl B-hydroxy-ethylammonium chloride	Detergent Germicide	Liquid	50%	Cationic	A detergent and wetting agent with moderate bactericidal power—for use in the textile industry under the name "Deceresol SE"
Aerosol 18	American Cyanamid Co.	N-octa decyldisodium sulfosuccinamate	Detergent	Paste	35%	Anionic	Mainly a detergent in contrast to other Aerosols except 22 below
Aerosol 22	American Cyanamid Co.	N-octa decyl tetrasodium (1,2- dicarboxyl ethyl sulfosuccinamate	Detergent Wetting	Liquid	35%	Anionic	Granular yellow solid; similar to Aerosol 18 in detergency
Agent TR BPE	American Cyanamid Co.		Emulsifier	Wax	100%	Anionic	Oil in water emulsifiers. In composition R $C_{19}H_{27}$ (Agent TR) and 2 p-tert-butylphenoxy-ethyl (Agent BPE)

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Agrimul 70-A	Geigy Chemical Co.	Alkyl aryl polyether alcohol	Emulsifier	Liquid	100%	Nonionic	Agricultural emulsifier for DDT, Lindane and BHC
Agrimul C	Geigy Chemical Co.	Aromatic sulfonate-oxide condensate blend	Emulsifier	Liquid	100%	Anionic	Agricultural emulsifier for Aldrin, Dieldrin Endrin and Heptachlor
Agrimul GM	Geigy Chemical Co.	Aromatic sulfonate-oxide condensate blend	Emulsifier	Liquid	100%	Anionic	Chlordane solubilizer; herbicidal ester emulsifier
Agrimul T Improved	Geigy Chemical Co.	Aromatic sulfonate-oxide condensate blend	Emulsifier	Liquid	100%	Anionic	Agricultural emulsifier for Toxaphene, Chlordane, Strobane, and herbicidal esters
Ahcovel E F A	Arnold, Hoffman & Co.	Fatty carbamide derivatives	Lubricant	Paste	50% 30% 35%	Anionic Anionic Cationic	Ahcovel E & F are anionic textile softeners. Ahcovel A is a cationic softener for use where alkaline salts are absent
Ahcowet ANS	Arnold, Hoffman & Co.	Alkyl aryl sodium sulfonate	Wetting	Liquid	55%	Anionic	Textile, leather, etc.
Ahcowet N	Arnold, Hoffman & Co.	Ethylene oxide condensate	Wetting	Liquid	25%	Nonionic	Will withstand 2% alkali or acid
Ahcowet RS	Arnold, Hoffman & Co.	Sulfated fatty acid ester	Wetting Dispersing	Liquid	65%	Anionic	Water soluble, soluble in kerosene and chlorinated hydrocarbons, dispersible in benzene. Textiles, dye baths, sanforizing, etc.
Ahcowet VL	Arnold, Hoffman & Co.	Ethylene oxide condensate	Dispersant Retardant	Liquid	20%	Nonionic	Retardant for dyeing pale shades with vat dyes; leveling for vat-dyed goods, dispersant for disperse dyes
Ahcowet 51	Arnold, Hoffman & Co.	Alkyl aryl sulfonate	Detergent Penetrant	Liquid	38%	Anionic	Low cost, general detergent; penetrant for warp sizing; boil-off assistant; leveling agent for dyeing sulphurs and directs
Ahcowet 126	Arnold, Hoffman & Co.	Fatty amide	Wetting Rewetting	Liquid	50%	Cationic	Used mainly in the paper trade in the production of wet-strength papers
Ahcowet 129	Arnold, Hoffman & Co.	Sulfonated fatty acid ester	Wetting Leveling	Liquid	60%	Anionic	Wetting agent for continuous high speed vat dye baths where foaming is a serious problem; dispersant for vat powders
Albasol BF	Nopco Chemical Co.	A potassium soap, solubilized with glycol	Emulsifier	Liquid	91%	Anionic	A perfume solubilizing agent
Albatex POK Paste	Ciba Co.	Benzimidazole compound	Dispersing Emulsifying	Paste	15%	Anionic	Penetrating, leveling and dispersing agent
Alcolec	American Lecithin Co.	Lecithin	Emulsifier	Paste		Nonionic	A series of lecithin products such as Alcolec DS, HS-2, HS-3, MS-10, MS-12, 4135, WDR, HO41ON, Alcolec Granules; Use: as emulsifiers in food, cosmetic & pharmaceutical trades
Aldo 25	Glyco Products Co.	Propylene glycol monostearate	Emulsifying	Solid	100%	Nonionic	An edible type self-emulsifier
Aldo 33 28	Glyco Products Co.	Glyceryl monostearate	Emulsifying	Powder	100%	Nonionic	Edible, used in baking, ice cream, cosmetics and industrial processes; "Aldo 28" is a bead form of product made from a different grade of monoglyceride than "Aldo 33." It is self-emulsifying. "Aldo "33" is neutral.
Aldo 40	Glyco Products Co.	Glycerol oleostearate	Emulsifying	Paste	100%	Nonionic	A cosmetic and food emulsifier
Alfracal	Alframine Corp.	Alkyl aryl sodium sulfonate	Detergent	Powder	45%	Anionic	A textile detergent and scouring agent
Alipal CO-433	Antara Chemicals, a sales div. of General Aniline and Film Corp.	Sodium salt of a sulfate ester of an alkyl phenoxy polyoxyethylene ethanol	Detergent Wetting Dispersing	Liquid	28%	Anionic	Surfactant with high foaming qualities in hard or soft water; lime soap dispersant; stable in hard water, alkaline solutions and mild acid
Alipal CO-436	Antara Chemicals, a sales div. of General Aniline and Film Corp.	Ammonium salt of sulfate ester of an alkyl phenoxy polyoxyethylene ethanol	Detergent Wetting Dispersing Emulsifying	Liquid	58%	Anionic	Stable in hard water and mild acid solutions; foamer in hard water. Uses: detergent base in car wash, rug shampoo and high foam liquid dishwashing formulations; surfactant in cosmetic preparations; emulsifier for copolymerization of vinyls; anti-static for natural and synthetic fibers.
Aliphatic ester sulfate	Onyx Oil & Chemical Co.	As given in name	Wetting Emulsifying	Liquid	55%	Anionic	Textile finishing and processing, pigment dispersion and dye leveling

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Alkamine Pdr. OBX	Amalgamated Chemical Co.	Blend of alkali, soap, synthetic	Detergent	Powder	100%	Anionic	Used in conjunction with "Evenate OBX" for one bath scouring and dyeing of hosiery and piece goods
Alkamine SJ	Amalgamated Chemical Co.	Sulfated fatty amine	Detergent	Paste	42%	Anionic	Textile processing
Alkanol B	E. I. du Pont de Nemours & Co.	Sodium alkyl naphthalene sulfonate	Wetting Dispersing	Powder		Anionic	Textiles, metal cleaning
Alkanol DW	E. I. du Pont de Nemours & Co.	Alkyl aryl sodium sulfonate	Detergent	Liquid		Anionic	A general use detergent; clear yellow solution
Alkanol S Flakes	E. I. du Pont de Nemours & Co.	Sodium tetrahydronaphthalene sulfonate	Dispersing Solubilizing	Flake		Anionic	Increases solubility of many synthetic detergents
Alkanol WXN	E. I. du Pont de Nemours & Co.	Sodium alkyl aryl sulfonate	Wetting Rewetting Penetrating	Liquid		Anionic	Most efficient of du Pont wetting agents for textiles
Alkanol 189-S	E. I. du Pont de Nemours & Co.	Long chain hydrocarbon sodium sulfonate	Wetting Emulsifying Detergent	Liquid		Anionic	General use as detergent, wetting, penetrating agent; textiles
Alkaterge A E T	Commercial Solvents Corp.	Substituted oxazolines homologous series to Alkaterge C	Wetting Emulsifying	Liquid	100%	Cationic	Molecular weight increases slightly from A to E to T; spreading agent and pigment dispersing
Alkaterge C	Commercial Solvents Corp.	A substituted oxazoline	Dispersing Emulsifying	Liquid	100%	Cationic	One percent in mineral oil lowers interfacial tension against water more than 95%. Dispersing agent for solids in mineral oils
All (retail)	Monsanto Chemical Co.	Compound containing Sterox as active ingredient	Detergent	Powder		Nonionic	A product designed for automatic washers. Gives low foam value with good detergency. Available in bead form as "Fluffy All."
Alox Series	Alox Corp.	Complex esters of high molecular weight acids derived from oxidized petroleum; also the amine salt of long chain acids and complex metallic soaps of mixed oxygenated hydrocarbons	Wetting Emulsifying				Lubricating, and for enhancing wetting properties of oils and displacing water in control of metal corrosion
Alro Amines C O S	Geigy Chemical Co.	Heterocyclic tertiary amine 	Detergent	Solid	100%	Cationic	The alkyl is derived from lauric acid (C) oleic acid (O) and stearic acid (S). With alkyl halides they yield quaternary ammonium salts. See also "Amine 226," "Nopcogen 20-0" and "Ethomeen"; sanitizing detergent in acid solution, paint dispersant, textile softening agent
Alrodynes 255 315 6104 8020	Geigy Chemical Co.	Polyethylene glycol fatty esters	Emulsifier	Liquid	100%	Nonionic	A series of emulsifiers for agricultural sprays; "255" is designed for aromatic solvents; "315" is more hydrophilic than "255." "Aldrodyne 8020" is an all purpose agricultural emulsifier
Alrolene 70 65	Geigy Chemical Co.		Emulsifier	Liquid			Solvent detergents for use in dry cleaning and solvent cleaning of metals
Alromine RA	Geigy Chemical Co.	Fatty alkylolamine condensate	Emulsifier	Paste	25%	Anionic	Cosmetics, as hair conditioner, shampoos, softening agent
Alromine RU-100	Geigy Chemical Co.	Fatty condensate	Lubricant	Solid	100%	Nonionic	A substantive softening agent for protein, cellulose and synthetic fibers
Alropon Conc. Alropon 30	Geigy Chemical Co.	Salt of a secondary alcohol sulfate	Detergent	Paste	63%	Anionic	Wool scouring cream shampoo; optimum detergency at 50°C.; moderately resistant to hard water; "Alropon 30" is a 30% active form
Alrosene 31	Geigy Chemical Co.	Sodium salt of a modified alcohol sulfate from coconut fatty acids	Detergent Wetting	Powder	31%	Anionic	Household and textile detergent; not acid or alkali stable in any concentrated form over any period of time

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Alrosol Alrosol B	Geigy Chemical Co.	Fatty alkylol amide condensate	Detergent Wetting	Liquid	87%	Nonionic	Thickener, wetting agent, lubricant; Alrosol B is 100% active and used in liquid detergents
Alrosol C	Geigy Chemical Co.	Fatty alkylol amide condensate	Detergent	Liquid	100%	Nonionic	As for "Alrosol" with superior lathering and lime resistance; hair conditioning agent, shampoo
Alrosol H	Geigy Chemical Co.	Fatty alkylol amide condensate	Detergent Wetting	Liquid	87%	Nonionic	Same as "Alrosol," modified to give increased viscosity at 5-15% concentration
Alrosol O	Geigy Chemical Co.	Fatty alkylol amide condensate	Emulsifying Dispersing	Paste	100%	Nonionic	Nonionic emulsifier and dispersing agent; for dry cleaning detergents and as a mineral oil emulsifier
Alrosol S	Geigy Chemical Co.	Fatty alkylol amide condensate	Emulsifying	Solid	100%	Nonionic	Wax solid, dispersant, thickener, stabilizer
Alrosperse 11P	Geigy Chemical Co.	Fatty amine condensate	Emulsifier Dispersant	Wax	100%	Nonionic	
Alrosperse DC	Geigy Chemical Co.	Condensate	Detergent	Liquid	100%	Nonionic	Detergent for the solvent cleaning of metals, dry cleaning, fuel oil additive
Alrosperse 40K	Geigy Chemical Co.	Alkyl naphthalene sodium sulfonate	Dispersant Wetting	Liquid	40%	Anionic	For use in emulsion paints, cutting oils, polishing and buffing compounds
Alrosperse 100	Geigy Chemical Co.	A blend of nonionic and cationic agents	Emulsifier Dispersant	Liquid	100%	Cationic	Absorbs strongly to metallic and non-metallic surfaces; Use: Solvent cleaner for metal surfaces; dry cleaning agent for spotting
Alrowet D-75	Geigy Chemical Co.	Dioctyl sodium sulfosuccinate	Wetting	Liquid	75%	Anionic	A textile wetting agent
Alrowax 75	Geigy Chemical Co.	A fatty condensate	Foam Stabilizer	Powder	100%	Nonionic	Foam stabilizer for synthetic detergents
Alrowax 95	Geigy Chemical Co.	A fatty condensate	Foam Stabilizer	Powder	100%	Nonionic	Foam stabilizer for use with anionic detergents; also acts as a viscosity builder and as an opacifier.
Amerse (retail)	Vestal, Inc.	Quaternary ammonium salt	Germicide	Solid	30%	Cationic	In tablet form for easy dispensing; also available in liquid form; for preparation of general sanitizing solutions; sold through wholesalers
Ammonyx AO CO	Onyx Oil & Chemical Co.	Alkyl dimethyl amine oxide	Wetting Emulsifier	Liquid	20%	Cationic	A wetting agent in concentrated salt solutions; for oil emulsification; "Ammonyx CO." wetting agent in acid solutions, as well
Ammonyx OO	Onyx Oil & Chemical Co.	Alkyl dimethyl amine oxide	Wetting Emulsifying	Liquid	20%	Cationic	A wetting agent in concentrated salt solutions; for oil emulsification
Ammonyx G T	Onyx Oil & Chemical Co.	Cetyl dimethyl benzyl ammonium chloride	Germicide Fungicide	Paste Liquid	98% 25%	Cationic	Leather processing, textile dyeing auxiliary, general disinfectant; "Ammonyx T" is a 25% aqueous solution of "Ammonyx G"
Ammonyx DME	Onyx Oil & Chemical Co.	Cetyl dimethyl ethyl ammonium bromide	Germicide Fungicide	Liquid	75%	Cationic	General disinfecting and sanitizing agent; pharmaceutical applications
Ammonyx TRM	Onyx Oil & Chemical Co.	Cetyl trimethyl ammonium bromide	Germicide Fungicide	Liquid	60%	Cationic	General disinfecting and sanitizing agent; pharmaceutical applications
Antarate K	Antara Chemicals, a sales division of General Aniline & Film Corp.	Alkyl carboxylate	Emulsifier	Liquid	100%	Anionic	An emulsifier for mineral oil and hydrocarbon solvents
Antaron FC-34	Antara Chemicals, a sales division of General Aniline & Film Corp.	Complex fatty amido compound	Detergent	Liquid	40%	Amphoteric	High foam, water soluble surfactant with soap like qualities; acid; salt and alkali stable; Uses: textile detergent, rug shampoos, hard surface detergent
Antarox G-100	Antara Chemicals, a sales division of General Aniline & Film Corp.	Alkyl polyoxyethylene glycol amide	Dispersing	Liquid	100%	Nonionic	A nonionic surfactant which has cationic properties in acid media; stable in 10% sulfuric acid solutions; Use: viscose spin bath additive
Apasol W-1345	Jacques Wolf & Co.	A sulfonated ester of a fatty alcohol	Wetting Dispersing	Liquid	50%	Nonionic	A textile dyeing assistant
Apexomide	Apex Chemical Co.	Amine condensate	Detergent	Liquid	25%	Nonionic	A textile scouring aid

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Aquet (retail)	Emil Greiner Co.	An alkyl aryl polyethylene glycol	Detergent	Liquid	25%	Nonionic	A product for industrial use, such as in laboratories
Arctic Syntex HD	Colgate-Palmolive Co.	Alkyl aryl sulfonate plus builders	Detergent	Bead		Anionic	A heavy duty detergent
Arctic Syntex M beads	Colgate-Palmolive Co.	Sodium oleyl methyltaurate	Detergent Emulsifier Wetting	Beads	31%	Anionic	Hygroscopic; similar to "Igepon T-73"; excellent detergent in acid, alkali and hard water; more stable than "Arctic Syntex A" General purpose industrial detergent in bead form
Areskap-100 50	Monsanto Chemical Co.	Monobutylphenyl-phenol sodium monosulfonate $C_4H_9(SO_3Na)C_6H_3—C_6H_4(OH)$	Wetting	Powder	100%	Anionic	More polar solvent than "Aresket" and "Aresklene" series; uses: insecticides, embalming fluids; see also "Beaconol M"; "Areskap-50" is 50% aqueous solution of "Areskap-100"
Aresket-300 240	Monsanto Chemical Co.	Monobutyl biphenyl sodium monosulfonate	Wetting	Powder	100%	Anionic	Less polar solvent than "Areskap-100"; wetting properties best under alkaline conditions; uses: insecticidal sprays, etc. "Aresket-240" is 40% aqueous solution of "Aresket-300"
Aresklene 375	Monsanto Chemical Co.	Dibutylphenyl phenol sodium disulfonate	Wetting	Liquid	75%	Anionic	Water and polar solvent solubility good; principal use as a wetting agent in the application of rubber to fabric, and in all spray emulsions
Arkolene GN	Arkansas Co.	Ammonium alkyl aryl sulfonate	Wetting	Liquid	35%	Anionic	A textile product useful in carbonizing wool, etc.; resistant to strong acids
Arkolene WX	Arkansas Co.	Sodium alkyl aryl sulfonate plus polyglycol thioether	Wetting	Liquid	45%	Anionic	A textile product useful as a penetrant and rewetting agent
Arlacel 20 40 60 80 83 85	Atlas Powder Co.	Sorbitan monolaurate (20), monopalmitate (40), mono stearate (60), monooleate (80), thioleate (85) and sesquioleate (85)	Emulsifier	Liquid and Solid	100%	Nonionic	Cosmetic and pharmaceutical grade of the corresponding "Span" compounds, for use in topical applications; "Arlacel 83," cosmetic and pharmaceutical grade of "Arlacel C"; "Arlacel 20, 80, 85" and "83" are liquids
Arlacel C	Atlas Powder Co.	Sorbitan sesquioleate	Emulsifier	Liquid	100%	Nonionic	W/O emulsifier
Armac 8,10,12, 16,18, C,S,T, HT	Armour & Co.	Acetic acid salts of the n-alkyl amines	Emulsifiers	Solid	100%	Cationic	Flotation agents, corrosion inhibitors; A "D" following the amine name, indicates an "Armac" prepared from distilled amine. Numbers refer to fatty chain length. "C" is coconut acids; "S," soya; "T," tallow; and "HT," hardened tallow acids
Armeen 8,10,12, 16,18 C,S,T, HT	Armour & Co.	Primary amines	Intermediate	Liquid and Solid	100%	Cationic	A series of primary amines with the alkyl group derived from fatty acids; intermediates for the preparation of corrosion inhibitors, flotation agents, etc.; "Armeen 16, 18, T" and HT are solids. The balance is liquids
Armeen 2C 2HT	Armour & Co.	Secondary amines (di-n-alkyl amines)	Intermediate	Solid	100%	Cationic	For corrosion inhibitors, flotation agents, etc.
Armeen DMS DM16 DM18	Armour & Co.	Tertiary amines (n-alkyl dimethyl amines)	Intermediate	Liquid	100%	Cationic	For corrosion inhibitors, flotation agents, etc.
Armour Suds (retail)	Armour & Co.	A built alkyl aryl sodium sulfonate	Detergent	Beads	—	Anionic	A built all purpose household detergent
Armol	Burkart-Schier Chemical Co.	Alkyl aryl sodium sulfonate	Detergent	Powder	65%	Anionic	A textile scouring agent
Arquad 8,10,12, 16,18 C,S,T,	Armour & Co.	n-alkyl trimethyl ammonium chlorides	Emulsifiers Bactericides Softeners	Liquid	50%	Cationic	Sanitizing agents, corrosion inhibitors, textile softeners, anti-static agents; "Arquad 12" is also available in 33% concentration.

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Arquad 2C 2 HT	Armour & Co.	di-n-alkyl dimethyl ammonium chloride	Germicide	Liquid Paste	75%	Cationic	A quaternary ammonium compound
Atco DA	Metro-Atlantic, Inc.	Modified fatty acid amine condensate	Detergent Wetting	Liquid	30%	Nonionic	Textile
Atco X-500	Metro-Atlantic, Inc.	Fatty acid amine condensate	Detergent Wetting	Liquid	95%	Nonionic	Textile
Atconil O	Metro-Atlantic, Inc.	Fatty alcohol polyglycol ether	Dye Leveling	Liquid	20%	Nonionic	Textile
Atcopal D	Metro Atlantic, Inc.	Alkyl phenyl polyglycol ether	Detergent Wetting	Liquid	100%	Nonionic	Textile, household
Atcopon Special Hi Conc. 330	Metro Atlantic, Inc.	$C_nH_{2n}CON(CH_3) - C_2H_4SO_3Na$	Detergent Wetting	Gel Liquid Liquid	17% 29% 33%	Anionic	Textile
Atcosyn	Metro Atlantic, Inc.	Sodium salt of sulfated fatty amine	Detergent Wetting	Powder		Anionic	Textile
Atcoterge	Metro Atlantic, Inc.	Fatty alcohol sodium sulfate	Detergent Wetting	Paste	30%	Anionic	Textile
Atcowet B	Metro Atlantic, Inc.	Modified alkyl aryl sodium sulfonate	Detergent Wetting	Liquid	30%	Anionic	Textile
Atcowet T	Metro-Atlantic, Inc.	Dioctyl sodium sulfosuccinate	Wetting	Liquid	65%	Anionic	Textile
Atlasene 500C	Atlas Refinery, Inc.	Fatty alkylol amide condensate	Detergent Wetting	Liquid	100%	Nonionic	Fulling, scouring, soaping, dyeing, sanforizing
Atlox 81	Atlas Powder Co.	Polyoxyethylene sorbitan monooleate	Emulsifier	Liquid	100%	Nonionic	For formulating agricultural chemicals
Atlox 672	Atlas Powder Co.	Glycerol sorbitan laurate	Emulsifier	Liquid	100%	Nonionic	For formulating agricultural chemicals
Atlox 1045	Atlas Powder Co.	Polyoxyethylene sorbitol laurate	Emulsifier	Liquid	100%	Nonionic	For formulating agricultural chemicals
Atlox 1045A	Atlas Powder Co.	Polyoxyethylene sorbitol oleate-laurate	Emulsifier	Liquid	100%	Nonionic	For formulating agricultural chemicals
Atlox 1086 1087 1276	Atlas Powder Co.	Polyoxyethylene fatty esters	Emulsifier	Liquid	100%	Nonionic	Emulsifiers for agricultural use; "Atlox 1086" is the sorbitol hexaoleate; "Atlox 1087" is the sorbitol septaoleate, and "Atlox 1276" is sorbitol tallate.
Atlox 2065 2085	Atlas Powder Co.	Sulfonated oil combined with polyoxyethylene sorbitol esters of mixed fatty and resin acids	Emulsifier	Liquid	100%	Anionic and Nonionic	For formulating agricultural chemicals
Atmul 82 122	Atlas Powder Co.	Mono and diglycerides of lard	Emulsifier	Paste	45% 60%	Nonionic	A food emulsifier as for bread
Atolene NR RW	Dexter Chemical Corp.	A sulfated ester of oleic acid (RW) Sodium salt of a sulfonated oleic acid (NR)	Wetting Lubricating	Liquid		Anionic	Textile yarn lubricant and dye leveling agent
A-2-Z	Planetary Chemical Co.	A built sodium alkyl aryl sulfonate	Emulsifier Wetting	Liquid	100%	Anionic	A general purpose emulsifier and wetting agent
Avasol 114, 114A 153, 153A 66, 66A	Alramine Corp.	Fatty acid derivative	Emulsifier	Liquid	100%	Cationic	Emulsifier for insecticidal sprays; the designation "A" signifies that the product has been made neutral. "Avasol 153A" is derived from tall oil designed particularly for DDT and chlordane.
Avitex AD	E. I. du Pont de Nemours & Co.	Sulfated alcohol derivative	Wetting Dispersant	Liquid		Anionic	Textile processing; dyeing assistant
Avitex C	E. I. du Pont de Nemours & Co.	Modified alcohol sulfate	Softener	Paste		Anionic	Textile and paper softening and lubricating agent
Avitex NA	E. I. du Pont de Nemours & Co.	Higher alkyl amine composition	Softener	Paste		Cationic	Antistatic and softening agent for textile finishing
Avitex R	E. I. du Pont de Nemours & Co.	Alkyl amine derivative	Softener	Paste		Cationic	Antistatic softening agent for textiles, etc.

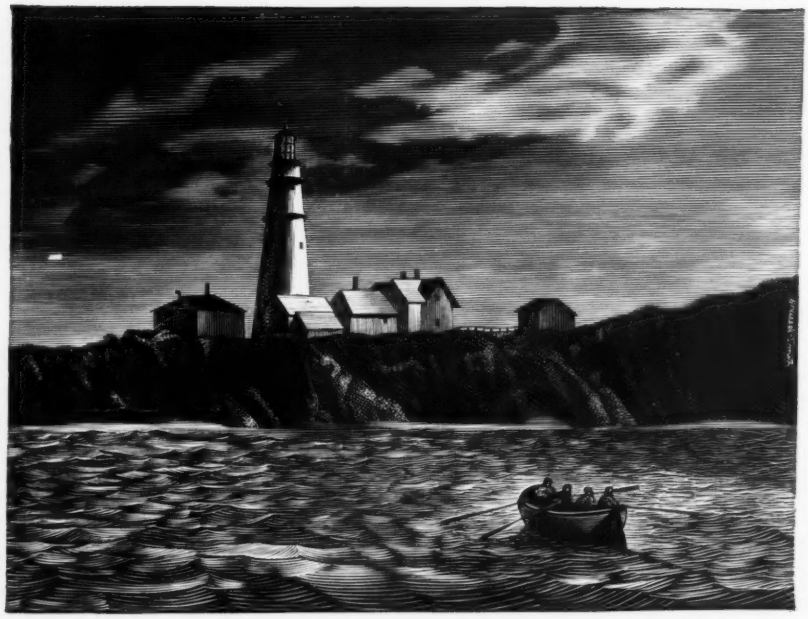
Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Avitex SF	E. I. du Pont de Nemours & Co.	Sodium cetyl alcohol sulfate	Softening	Paste		Anionic	Finishing agent for textiles
Avitex W	E. I. du Pont de Nemours & Co.	Sodium cetyl alcohol sulfate plus stearyl alcohol	Softening	Paste		Anionic	Finishing agent for textiles
Avitone A AL	E. I. du Pont de Nemours & Co.	Long chain hydrocarbon sulfonate composition	Softener	Paste		Anionic	Softening and lubricating finishing agent for textiles, paper and leather; Avitone AL is the same as Avitone A with added lubricant
Avitone SR	E. I. du Pont de Nemours & Co.	Long chain hydrocarbon composition	Softener	Paste		Anionic	Softening and lubricating textile finishing agent
Avitone T	E. I. du Pont de Nemours & Co.	Long chain hydrocarbon composition	Softener	Liquid		Anionic	Textile finishing and dyeing
Azocel	Synthetic Chemicals Inc.		Wetting Penetrant	Liquid		Nonionic	A solubilizing agent for developed and acid dyes
Barisol BRM	Dexter Chemical Corp.	Potassium salt of the phosphate of a complex multi carbon alcohol	Wetting Dispersing	Liquid	30%	Anionic	A textile wetting agent for dye leveling, pectin removal from cottons, etc.
Base 301-R	E. F. Drew & Co.	A coconut fatty acid amine condensate	Emulsifier Detergent	Liquid	95%	Anionic	Water dispersible; alcohol, toluol, kerosene and naphtha soluble; a water in oil emulsifier for paraffin wax; a dry cleaning detergent
Base 401M	E. F. Drew & Co.	Polyoxyalkylene esters and sulfonates	Emulsifier	Liquid	98%	Nonionic	Insecticide emulsifier for DDT, toxaphene, chlordane, etc.
Beaconol M	Beacon Chemical Co.	Potassium salt of monoethyl phenyl phenol monosulfonate	Wetting Dispersing			Anionic	Compare also with "Areskap 100"; uses: textile, leather, paints
Beaconol S	Beacon Chemical Co.	Ammonium salt of monoethyl phenyl phenol monosulfonate	Wetting Dispersing			Anionic	Textile, leather, paper, paint, etc.
Beaconol T	Beacon Chemical Co.	Guanidine salt of monoethyl phenyl phenol monosulfonate	Wetting Dispersing			Anionic	Dispersing agent for pigments in inks, paints, etc.
Bemul	Beacon Chemical Co.	Glycerol monostearate	Emulsifier	Powder	100%	Nonionic	Water dispersible; used in cosmetics, shortening, lubricating oils; see also "Tegin," etc.
Ben Hur	Colgate-Palmolive Co.	Alkyl aryl sulfonate plus builders	Detergent	Powder		Anionic	Industrial washing powder
Bensapol	Jacques Wolf & Co.	A modified sulfonated caster oil	Detergent	Liquid		Anionic	A textile scouring agent
Benzene Sodium Sulfonate	Pedlow-Nease Corp.	As named	Wetting	Powder	95%	Anionic	Solubilizing agent, useful in extractions
Beratex 510	Perkins Soap Co.	A modified alkyl aryl sulfonate	Detergent Wetting	Liquid		Anionic	A textile scouring agent
Berkopon BSW HGS RCW	Perkins Soap Co.		Detergent Wetting	Liquid		Nonionic	Textile bleaching, scouring and whitening agent
Berkopon SAN	Perkins Soap Co.	Alkyl aryl sodium sulfonate	Detergent	Flake	40%	Anionic	A textile detergent and dye assistant
Betramine	Allramine Corp.	Sulfated alkylol amide	Detergent	Powder	25%	Anionic	Textiles, general cleanser
Betanol 152 401 520 540 560 564 701	Beacon Chemical Co.	High molecular weight esters	Emulsifying Wetting			Nonionic	Not acid or alkali stable; uses: cosmetics, pharmaceuticals, paints, etc.; "564" is an acid stable hydroxy ester for shampoos
Betasol	American Cyanamid Co.						Name given "Aerosols" when sold to leather trade
Bionol A-50	Antara Chemicals, a sales division of General Aniline & Film Corp.	Alkyl dimethyl benzyl ammonium chloride	Germicide	Liquid	50%	Cationic	A bactericidal and germicidal agent. Activity unaffected by inorganic salts
Blancol	Antara Chemicals, a sales division of General Aniline & Film Corp.	Naphthalene sulfonic acid condensate	Dispersant	Granular	95%	Anionic	Peptizing agent in insecticide formulations; solubilizer for pigments or filler in latex emulsions

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Blancol N	Antara Chemicals, a sales div. of General Aniline and Film Corp.	Naphthalene sulfonic acid condensate	Dispersant	Powder	95%	Anionic	Multiple uses in paper industry; "Blancol N" differs only in physical form, being a powder
Blendene	Glyco Products Co.	Terpene fatty acid salt complex	Emulsifying Dispersing	Liquid	100%	Anionic	Nontoxic; oil in water emulsifier for oils and solvents
Bozetol	Hart Products Corp.	Sulfated ester	Wetting	Liquid		Nonionic	Non-sudsing textile wetting out agent
Breeze (retail)	Lever Brothers Co.	A sodium alkyl aryl sulfonate plus builders	Detergent	Powder		Anionic	All purpose heavy-duty detergent
Bretol	Fine Organics, Inc.	Cetyl dimethyl ethyl ammonium bromide	Germicide	Solid	100%	Cationic	A sanitizer; see also "Ethyl Cetab"
Brij-30	Atlas Powder Co.	Polyoxyethylene lauryl ether	Emulsifier Wetting	Liquid	100%	Nonionic	High resistance to alkaline conditions
Brij-35	Atlas Powder Co.	Polyoxyethylene lauryl ether	Emulsifier Wetting	Solid	100%	Nonionic	High resistance to alkaline conditions
Bromat	Fine Organics, Inc.	Cetyl trimethyl ammonium bromide	Germicide	Powder	100%	Cationic	A sanitizing agent
BTC- 50 100 471 824 927	Onyx Oil & Chemical Co.	Alkyl dimethylbenzyl ammonium chloride	Germicide	Liquid	50%	Cationic	"BTC-50" is 50% aqueous solution. Phenol coefficient on **S. A.** not less than 200; product manufactured for use in detergent sanitizers. "BTC-100" is 100% Concentrated. "BTC-471" and "927" are 50% active solutions; very similar to "BTC-50"
Burkem 288	Burkart-Schier Chemical Co.	Sulfated fatty ester	Wetting Dispersing Softening	Liquid	65%	Anionic	Dyeing of finishing textiles
Burkester	Burkart-Schier Chemical Co.	Polyethylene glycol fatty ester	Emulsifier	Liquid	100%	Nonionic	Use: textiles
C-430	C. P. Hall Co.	Complex fatty acid ester	Detergent Emulsifier	Liquid	100%	Nonionic	A dry cleaning detergent (oil soluble)
Calpex	Apex Chemical Co.	Sulfated ester	Wetting Emulsifier	Liquid	25%	Anionic	A textile yarn lubricant
Calsolene Oil HSA	Arnold, Hoffman & Co.	Sulfated fatty acid ester	Wetting Dispersing	Liquid	46%	Anionic	Stable in acids, alkalies and inorganic salts
Carbo Moytol	Standard Chemical Products, Inc.	Alkyl aryl sulfonic acid	Wetting	Liquid		Anionic	This is the free acid or "Moytol" which see; used in textile work for carbonizing operations
Cardene	Carlisle Chemical Works, Inc.	A fatty alkanolamide	Emulsifier	Liquid	100%	Nonionic	An emulsifier for liquid shampoos, textile processing
Catylex	Hart Products Corp.	A salt of a tertiary amine	Emulsifier	Paste		Cationic	An acid scouring and wetting agent
Catylon C D	Hart Products Corp.	A salt of a tertiary amine	Emulsifier Bactericide	Liquid		Cationic	An acid scouring and wetting out agent
Cee Dee	Fairfield Laboratories	Alkyl dimethylbenzyl ammonium chloride	Germicide	Powder	20%	Cationic	A water soluble sanitizing agent for food processing equipment; 80% inert water soluble filler
Celopon	Arkansas Co.	Sodium sulfonate of a fatty acid derivative	Detergent Wetting	Gel	25%	Anionic	A textile scouring aid; highly acid and alkali resistant
Ceranine HC	Sandoz Chemical Works, Inc.	A fatty amide derivative	Softener	Paste		Cationic	Antistatic and softening agent for synthetic fibers
Cerasynt S SA SE SN M MN DM	Van Dyk & Co.	Glycerol and glycol stearate	Emulsifier	Solid	100%	Nonionic	Emulsifiers for cosmetic and pharmaceutical use; "S," "SA" are glycerol monosterates; "SE, SN, M" and "MN" are ethylene glycol monostearates; "DM" is diethylene glycol monostearate

Trade Name	Manufacturer	Class and Formula	Main Uses	Form	% Conc.	Type	Remarks
Cerasynt IP	Van Dyk & Co.	Glycol amido stearate	Emulsifier	Flake	100%	Nonionic	A water dispersible oil soluble emulsifier for cosmetic use
Cerfak	E. F. Houghton & Co.	Sodium alkyl aryl sulfonate	Detergent Wetting	Flake	40%	Anionic	Used over full pH range for detergency and/or wetting; also for compounding cleaning agents
Cerfak Liquid	E. F. Houghton & Co.	Alkyl aryl sulfonate	Detergent Wetting	Liquid	25%	Anionic	Detergent for general cleaning of metals after heat treatment; also used as an all around industrial cleaner
Cerfak 453	E. F. Houghton & Co.	Blend of anionic and nonionic agents	Wetting Rewetting	Liquid	25%	Anionic	Used in textile field for wetting and rewetting; effective over wide pH range
Cerfak 455	E. F. Houghton & Co.	Blend of alkyl aryl sulfonate and nonionic	Detergent Wetting	Liquid	25%	Anionic	Used in textile and paper field for wetting and rewetting, effective over a wide pH range
Cerfak 1300 1301 1305	E. F. Houghton & Co.	Alkyl polyoxyethylene thioether	Detergent Wetting	Liquid	85%	Nonionic	Water soluble in all proportions; insoluble in kerosene or mineral oil; use: textiles, all operations; "Cerfax 1305" is a 65% active concentration of "Cerfak 1300." "Cerfak 1301" is modified "Cerfak 1300," having less wetting power but higher (99%) concentration of active
Cerfak 1400 1401 1405	E. F. Houghton & Co.	Alkyl polyoxyethylene ether	Detergent Wetting	Liquid	85%	Nonionic	Soluble in water and in Stoddard Solvent in all proportions; used for all wet processing operations of textiles; "Cerfak 1401" is a modified "Cerfak 1400" with a higher concentration of active material—93%. "Cerfak 1405" is a 65% active concentration of "Cerfak 1400"
Cerfak N-100	E. F. Houghton & Co.	Polyethanolamine condensate of a fatty acid	Detergent Wetting	Liquid	100%	Nonionic	Stable to acids and alkalies and to hard water; used in textile scouring and dyeing, particularly in alkaline scouring
Cetab	Fairfield Laboratories	Cetyl trimethyl ammonium bromide	Germicide	Powder	100%	Cationic	A pharmaceutical product for sanitizing solutions; water solubility at 20°C. is 0.5%; at 30°C. it is 40%
Cetol	Fine Organics, Inc.	Cetyl dimethyl benzyl ammonium chloride	Germicide	Solid	100%	Cationic	Phenol coefficient at 20°C. on **S.A.** 400; Supplied in technical and recrystallized grades
Cetyl Pyridinium Bromide and Chloride	Fine Organics, Inc.	As in name	Germicide	Solid	100%	Cationic	Surface-active agent and effective antiseptic
Cetylon	Fairfield Laboratories	Cetyl dimethyl benzyl ammonium chloride	Germicide	Crystalline	92%	Cationic	Compound contains 2 moles of water of hydration; very soluble in water, benzene, glycol, etc.; phenol coefficient on **S.A.** at 37°C—225-275
Charlab Condensate	Charlotte Chemical Laboratories		Wetting				Textiles
Cheelox B-14	Antara Chemicals, a sales div. of General Aniline & Film Corp.	Mixture of soluble salts of amino carboxyl acids	Sequestering Dispersing	Liquid	41%	Anionic	An organic sequestering agent for calcium and magnesium; especially effective for sequestering iron in alkaline solutions containing other heavy metallic ions; uses: sequestrant for kier boiling, peroxide, bleach baths, liquid soaps, and soaker alkali formulations
Cheer (retail)	Procter & Gamble Co.	A built alkyl aryl sodium sulfonate	Detergent	Bead		Anionic	A built, all-purpose detergent
Chel 185	Geigy Chemical Co.	Sodium dihydroxyethyl glycinate	Sequestering	Liquid	45%	Anionic	A general complexing agent
Chel DM-41	Geigy Chemical Co.	Trisodium hydroxyethyl ethylenediamine triacetate	Sequestering	Liquid	41%	Anionic	A complexing agent in mildly alkaline solutions

(To Be Continued)

FAMOUS LIGHTHOUSES OF AMERICA



PORTLAND HEAD LIGHTHOUSE, Maine, was built between 1787 and 1790 by two Portland masons engaged by George Washington, who instructed them to use rubblestone taken from fields and shores. During the Civil War, when raids on shipping required sighting the light from greater distances, the tower was raised 8 feet. Today it stands 80 feet above land and 101 feet above water at the southern entrance to Portland Harbor. It is one of the four Colonial lighthouses that have never been rebuilt.

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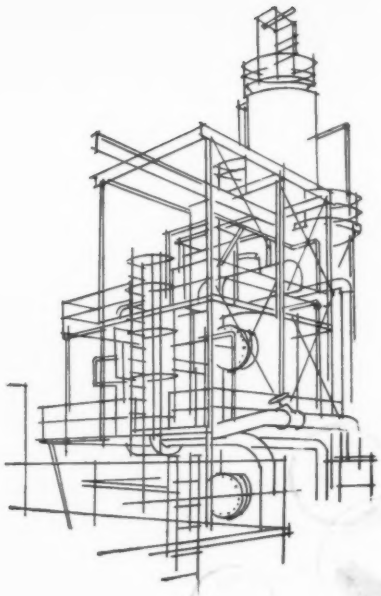

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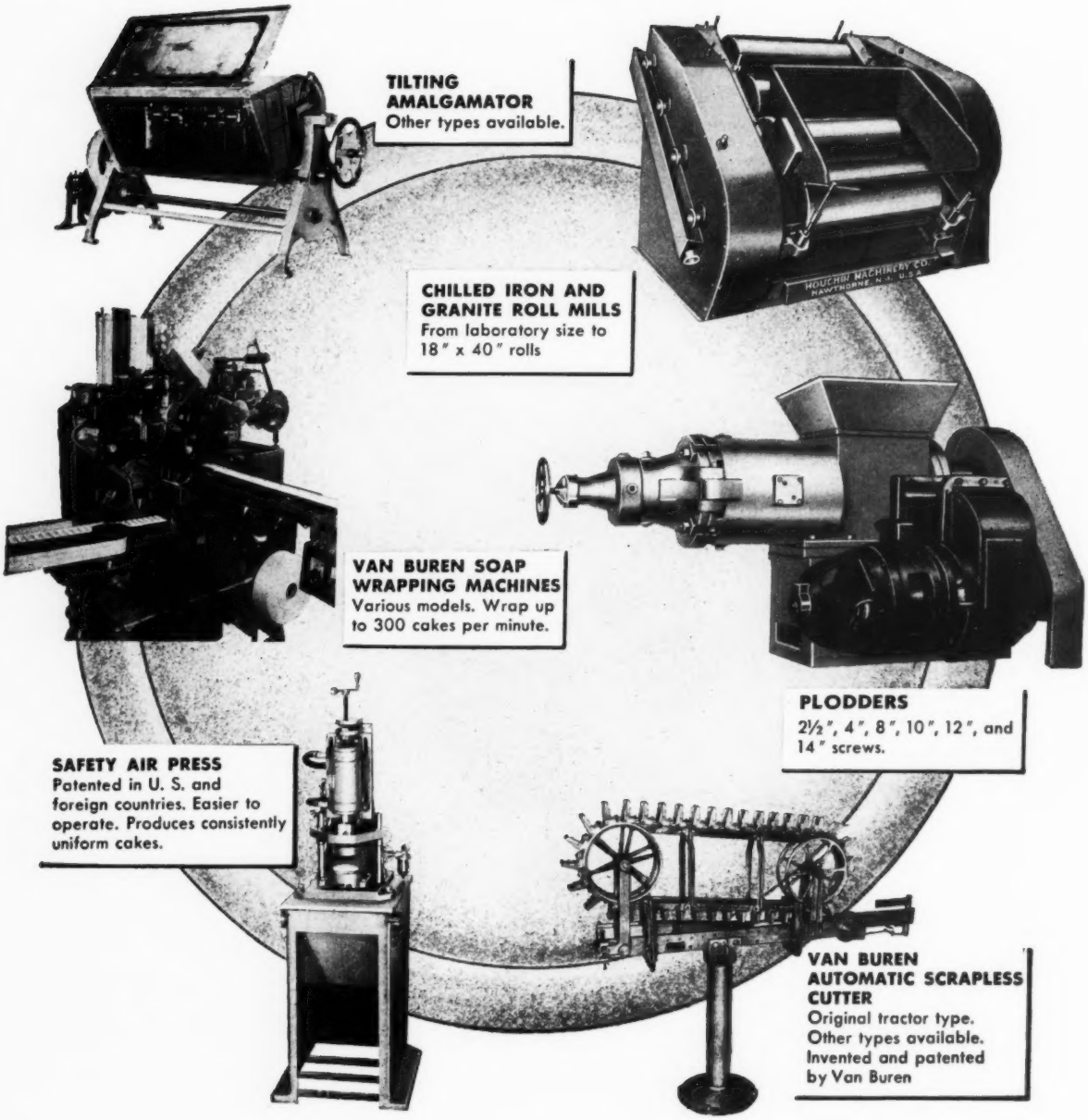

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Liquid Mixing Equipment

ALMOST every liquid chemical specialty is mixed or agitated during its manufacture. Many continue to be agitated during further processing operations (such as liquid filling) when it may be necessary to prevent the finished product from separating. This article will limit itself to the mixing and agitating of liquids and light slurries, as opposed to pastes and solids. It will attempt to describe the mixing operation and the equipment available to do this job best for the chemical specialties manufacturer—who makes such products as liquid floor waxes, furniture polishes, bactericides, disinfectants, household and industrial insecticides, silver polishes, aluminum cleaners, tarnish removers, paint brush cleaners, spot removers, glass cleaners, liquid room deodorants, liquid detergents, bowl cleansers, grease removers, liquid laundry starches, liquid laundry bleaches, liquid finishes and sealers, liquid soap, rodenticides, stock sprays, liquid moth specialties, automotive cleaners, anti-freeze compounds, brake fluids, liquid dishwashing compounds, metal cleaners, theatre sprays, rust preventives, and other liquid chemical specialties.

Mixing, as it will be considered in this discussion, is simply the combining by some mechanical means of agitation of two or more materials that exist separately. The materials to be mixed may be a gas, a liquid or a solid. The mixture may be any combination of these.

There are a number of means of mixing. They include simple physical mixtures to produce a uniform composition of materials going into the finished product. Mixing may be carried on in a steam-heated kettle to achieve a definite, uniform temperature of the materials being processed. Another function of mixing may be to aid in the completion of a chemical reaction needed to form the finished product; it may also help to disperse heat caused by this reaction. Mixing may set up a physical change in the product being mixed, such as dissolution, precipitation, evaporation, extraction, adsorption or flocculation. It may result in the formation of an emulsion or suspension.

THIS is the third of a series of articles discussing types of machinery and equipment used in the manufacture, processing and packaging of soaps, detergents, and such chemical specialties as floor waxes, disinfectants, household and industrial insecticides, spot removers, deodorants, floor cleaners, polishes, laundry bleaches, moth specialties, rodenticides, shave products, sweeping compounds, tooth pastes and powders, glass cleaners, dish washing compounds, etc. The main purpose of this series is to present the latest types of machines and equipment available to the soap, detergent and chemical specialties manufacturer in his daily plant operations.

Maintaining the critical temperature is most important in mixing. Suspension breakdowns, formation of non-homogenous masses and incomplete reaction may all result from wrong processing temperatures.

In addition, the type of agitation chosen must be correct. The use of unsuitable processing equipment can lead to such difficulties as air being whipped into the mixture, which can alter the weight of the finished product.

Basically, all mixing equipment consists of a prime mover attached to a shaft upon which different types of agitators or impellers are placed. The prime mover may be an electric motor or it may be compressed air. Electric motors may be the conventional open type or a completely enclosed explosion-proof type. The prime mover and the shaft may be connected directly or through a gear-reduction box, by V-belts, flat belts or chains. In order to use a direct drive mixer, the viscosity of the mixture should be below 300 centipoises. The use of a gear-reduction unit is necessary in heavier mixtures when the speed of the motor must be reduced and more power delivered to the shaft.

For attaching the unit to the kettle, some type of mount must be supplied. In the case of portable units, clamps attached to the motor frame are used. When mixing operations must take place under pressure or in a vacuum, a permanent installation is necessary. The unit may be designed so that a plate mounted to the mixing unit can be bolted to the kettle over a manhole, or the unit may be an integral part of the kettle. The shaft enters through a seal so that the pressure or vacuum can be maintained.

In selecting a mixing unit, both the mixer itself and the shape of the kettle must be considered. Cylindrical tanks are the most suitable vessel for mixing. Rectangular tanks require more power. The viscosity of the material must be considered. (Viscosity may be defined as the property of a fluid

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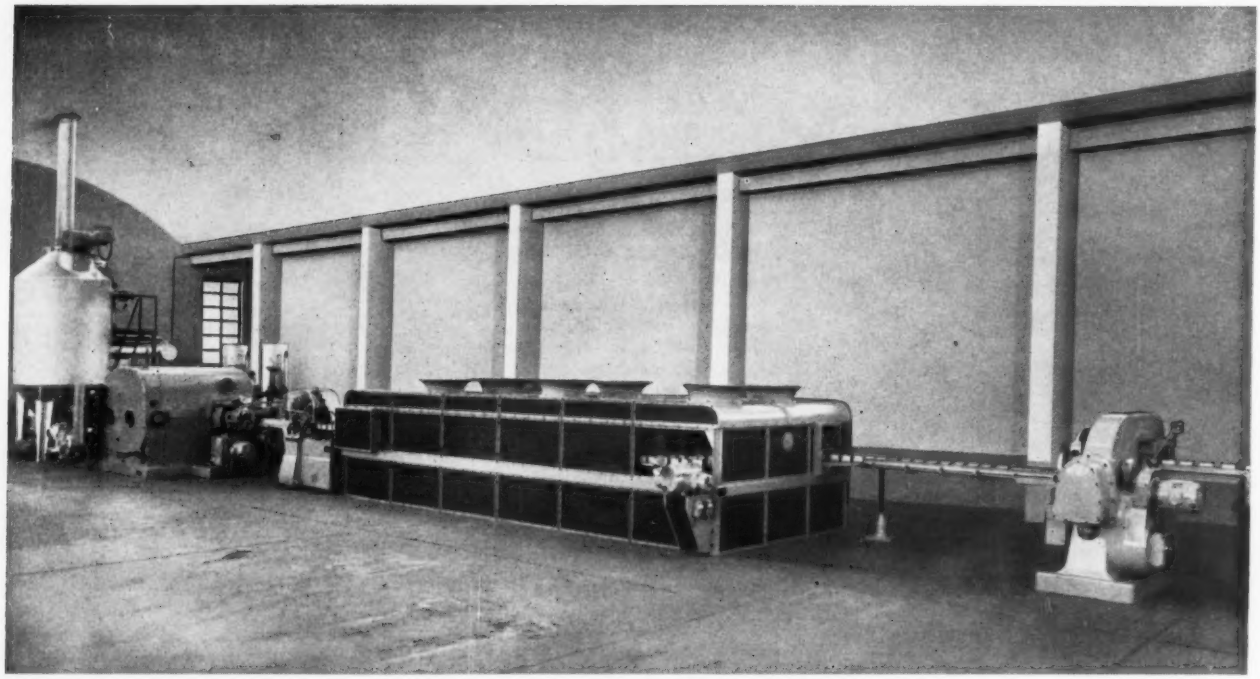

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Vi comunichiamo che con il Vs. impianto automatico per saponi da bucato trafilato otteniamo con nostra piena soddisfazione i seguenti tipi di sapone:

- Sapone normale puro al 62% di A.G.
- Sapone semitrasparente al 58% di A.G.
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- It is the only plant on the market cooling soap with simultaneous forming of a continuous bar, maintaining unchanged total fatty acids contents of liquid soap.
- Our SAIX plodder is the only plodder on the world market which, working without any endless screw, can plod soaps made with fats having a high or *low* melting point, even if containing high percentages of water or builders, namely:
  —pure soaps having 62-63% F.T.A.;
  —soaps having T.F.A. contents from 35% up to 62-63%;
  —dry,pure or filled soaps having T.F.A. contents from 35% up to 70-72%;
  —transparent dry laundry soaps having 70-72% T.F.A.;
  —transparent toilet soaps having 70-72% T.F.A.
- *Savings:* steam 100%—labor 70%—water 50%—power 50%
  A fully automatic and continuous operation starting from liquid soap to stamped finished cakes ready for packing.
- Only one workman to run the plant — small space requirements — absolutely no scraps.
- Soap perfumation automatically done by means of a volumetric proportioning pump.
- Highly increased foaming capacity — cakes undergo no deformation during storage.
- Less moistening of the packed highly water filled cakes.
- These plants are manufactured for the following output capacities: 0.5 — 1 — 2 — 3 tons per hour.
- We also manufacture:
  Complete plants for making toilet soaps and chips (cooling rollers — drying equipment — silos — weighing machines — mixing machines — milling machines — normal and vacuum plodders having one, two or three endless screws — cutting machines and stamping machines).
- Complete plants for soap powders and granules or synthetic detergent beads (continuous sulphonating equipment, spray drying equipment).
  Thirty years' experience in making soap machines.
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which causes it to resist flow.)

A satisfactory rate of flow and direction of motion of the entire body must be established and maintained so that all material in a container may be mixed to the desired degree and within the optimum time. To accomplish this, various types of impellers or agitators are used. They may be paddles, propellers, disks or turbines.

Paddle or arm mixers are probably the oldest type. They consist essentially of one or more arms, placed horizontally, vertically or diagonally, on the shaft and rotated within the mixing tank. The most common paddle impeller is the overhead or top-entering type.

The material is pushed or carried in a circular path. Thin liquids in unbaffled tanks tend to have a swirling motion imparted into them. The greatest shortcoming of this method is the stratification set up between paddles and this can be largely corrected by the use of baffles. In a light liquid mixture, long paddles revolving at a slow rate of speed are used. Unbaffled tanks are satisfactory for miscible liquids. The paddle is the one impeller that can be operated to cause the minimum of displacement or pumping action.

Paddles themselves can consist of a single set of arms at the bottom of the kettle, or they may form a gate paddle, be in the form of intermeshing fingers, one set moving and the other remaining stationary, or in numerous other configurations. The arm may be pitched at various angles. The higher the viscosity of the material being mixed, the more paddles that are necessary.

The propeller type of mixer can be either electric or air driven. The impeller can be a simple two or three blade propeller, or it may have variations such as saw-toothed edges, perforated blades, variable pitch blades and others. More than one propeller may be mounted on the same shaft and these may be pitched in opposite directions. Propeller agitators are preferred in certain instances because they cause less splashing, mix more quietly and usually require less power than a paddle mixer.

Propeller blades push forward what is actually a continuous cylinder of material. This cylinder is pushed in a straight line, the shape of the tank itself governing its destination. Generally, only one propeller need be used in liquids of low viscosity. The propeller can then be placed well below the surface of the liquid where the slip stream will scour the bottom of the tank. The thrust stream will turn the whole body over rapidly. Dual propellers are called for when the viscosity of the liquid makes it difficult to establish uniform circulation throughout the tank. Material tends to pocket around the single propeller. Dual propellers overcome this pocketing effect and allow the entire mass to circulate freely.

If a propeller mixer is placed in the center of the tank, or a portable mixer is placed on the side of the kettle so that the mixer shaft is on the radical center line of the tank and about 15 to 20 percent off the vertical, a vortex is created. In some mixing operations, the vortex, or whirlpool effect, may be desirable, for example, in quickly wetting finely powdered solids. There is some degree of top to bottom turnover, which is ideal for wetting down solids that have a tendency to float.

Vortexing can be corrected by the use of baffles in the tank. Some permanently installed side-entering agitators are set at a predetermined angle to prevent this vortexing.

Portable mixers are generally installed as off-center top-entering units. They are extremely useful in small plants where several small batches of different products are being mixed at the same time. This operation can be done with one or two mixers used over several kettles. Permanent top-entering units can be installed at an angle through a special opening in the side of the kettle to form an off-center unit similar to the portable units. This off-centering creates rapid top to bottom turnover with a circular motion, resulting in intimate contact of all particles.

Fixed, side-entering agitators (entering the kettle at right angles to the side of the kettle) are most useful for large batches of light liquids as the motion produced is a swirl. These fixed, side-entering agitators usually are installed at the bottom of the kettle.

Turbine impellers generally are available in a greater range of shapes than the propellers. They have more than three blades and are placed at the bottom of the container. These blades are attached at right angles to the shaft and may be thick or thin, straight or curved, pitched or not, or they can be both curved and pitched. Two or more may be attached to the same shaft.

These blades rotate at higher speeds than paddles and the flow is generally radial. A turbine impeller can be enclosed in a stationary cage and this arrangement will produce excellent and fine dispersions. Low installation in the tank allows turbine impellers to handle small or large batches equally well. Turbine impellers are used mostly for bleeding, dissolving and dispersing.

The final type of impeller is the disk. This consists of a flat piece of metal attached at right angles to the shaft. The disk may or may not have teeth or other wavy configurations along the outer edge to vary the flow. The edge can have a set similar to a saw blade—one tooth pointing up and the next down. Because of the high speed at which the disk travels, this type is especially good for dissolving and dispersing work.

Another method of mixing is the flow type. Here, the mixing effect is produced by interference of a steady flow of the material. The interruption may be caused by a variety of methods, but the arrangement is used only in continuous circulation systems for thorough mixing of miscible fluids.

Air agitation is frequently employed for mixing lighter type

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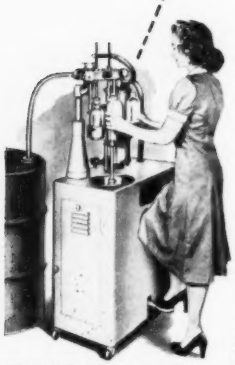

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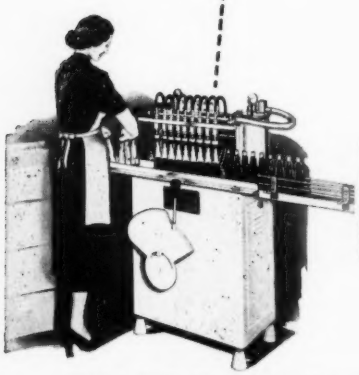

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Portable mixer made by Alsop Engineering Corp., has adjustable shaft. Unit clamps on side of mixing tank.

liquids. Jets may force compressed air in at one, two or several points along the wall of the mixing tank. Coils may entirely circle the wall of the container and compressed air is forced through this coil, causing agitation of the mixture.

Following are illustrations and descriptions of equipment supplied by leading manufacturers. Only a single machine of each manufacturer could be illustrated because of space limitations. However, most of these companies manufacture a complete line of mixing equipment.

Alsop Engineering Corp., Milldale, Conn., manufactures a line of portable and permanently mounted mixers, side-entering agitators, filters, tanks and pumps.

Portable type mixers are available in either a "Hy-Speed" or a "Slo-Speed" model. The "Hy-Speed" units are direct drive and range from 1/20 to three hp. Motor speeds range from 300 to 1725 r.p.m. "Slo-Speed" units range from ¼ to 7½ h.p. with a motor speed of 1725 r.p.m. on all units. Propeller speed is reduced to 420 r.p.m. on all units through gear-reduction boxes. Both models can be had with either open, drip-proof motors or totally enclosed explosion-proof motors.

Two three-bladed propellers are movable over the full length of the shaft, allowing for adjustment consistant with batch depth. Many different styles of propellers are available, including saw-toothed, cut-out, perforated, cage beaters, and variable pitch types.

Shaft lengths can be had to meet specific requirements and can be supplied in a variety of metals, including stainless steel, monel metal, nickel, aluminum, bronze, steel, special alloys and lead or rubber coated.

The units can be supplied with either an adjustable clamp bracket or with permanent mounting bracket clamp. These clamps allow adjustment in any direction for any type of mixing action.

Side-entering agitators are available in a range of sizes from one to 25 hp. All units are equipped with gear-reduction units so that motor speed is 1725 r.p.m. and shaft speed is 420 r.p.m. The manhole sizes range from 3½ to six feet, depending on the size of the unit. Special units, such as belt driven models, can be had. Mounting assembly includes stuffing boxes, extra shaft bearings, mounting flange and a reinforced support. The units are available with either regular or explosion-proof motors.

Eastern Industries, Inc., New Haven, Conn., manufactures a line of portable, turbine, side and top-entering, laboratory mixers, centrifugal, positive pressure and hydraulic pumps.

Illustrated is a portable mixing unit attached to a kettle. These portable mixers are available in sizes ranging from 1/20 to five hp., in various currents and voltages with either air-driven, or semi-enclosed, totally enclosed or explosion-proof motors. Models can be furnished with shafts and propellers of various alloys. Various clamping units are available.

Direct drive units come in two-electric-driven series. The "H" series of portable mixers have a shaft speed of 1725 r.p.m. and are suited for use with liquids of low viscosity. They can be furnished with motors ranging from 1/20 to five hp. Series "S" units have shaft speeds of 1125 r.p.m. and can be furnished with motors ranging from ¼ to five hp.

The "G" series has a geared-head drive with a shaft speed of 420 r.p.m. Motors range from 1/8 to five hp. Variable speed units are also available. Model "H-V" is available in two sizes; ¼ and 1/3 hp, and in speeds ranging from 500 to 2500 r.p.m. Model "G-V" is available in two sizes, ¼ and 1/3 hp with speeds ranging from 50 to 400 r.p.m. Model 8 is available in a 1/15 hp unit with a speed range from 80 to 850 r.p.m., adjusted by a variable rheostat, through a gear-reduction unit.

Portable mixer of Eastern Industries, Inc., attached to side of mixing kettle.

A line of turbine mixers with horsepower ratings from ¼ to 40 is available in a range of styles including belt-driven and gear-driven models, with or without a stuffing box.

A line of side and top-entering mixing units is also available. Series "A" mixers, available in side-entering units only, range from 5 to 30 hp at standard speeds of 1150, 420, and 280 r.p.m. Series "C" mixers are made in both horizontal and vertical models, and range from ¼ to 10 hp. Speeds range from 1725 r.p.m. (up to five hp), 1140 r.p.m. (up to 10 hp), 420 r.p.m. (up to 7½ hp) and 280 r.p.m. (up to five hp).

The driving unit is mounted on a rigid steel bridge and the gears are

Portable mixer of Mixing Equipment Co., featuring gear drive. Units range in hp from ¼ to three.

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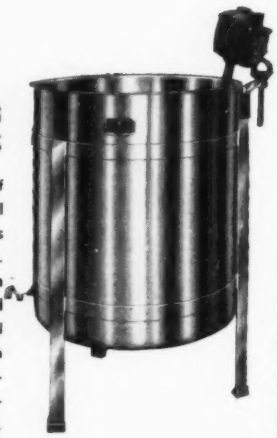

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totally enclosed and run in oil. Motors can be either of the open type, totally enclosed, fan cooled or explosion-resistant. If vapor-tight operation is required, the "Unimixer" can be provided with a combination stuffing box and oilless guide bearings. The kettle has gasketed vapor-tight covers and charging door.

The "Unimixer" drive is available in six different models for use with propellers, turbines, gas absorbers and other mixing elements. It is available with either direct drive propeller type with anti-friction bearings for mixing in an open top vessel, or with direct drive propeller type with stuffing box for agitation under pressure or vacuum. It is also available in geared drive propeller and turbine types with bearing or stuffing box units.

Mixing Equipment Co., 167 Mt. Read Blvd., Rochester 11, N. Y. manufactures a line of portable, top and side-entering and laboratory mixing machines.

Portable mixers are available in a range of sizes from 1/8 to three hp in approximately 30 different models. Several of the units have variable speed controls. Models come with either direct or gear drive, and with electric or compressed-air driving units.

Direct drive units are available in two series, "C" and "S", which range in size from 1/8 to ¾ hp with maximum speeds of 1750 r.p.m. Two of the "C" units have variable speed control, which ranges from 100 to 1800 r.p.m. Series "M" units range from one to three hp and turn at 1500 r.p.m.

Gear-driven units range from ¼ to three hp, with motor revolutions at 1750 r.p.m. and propeller turns ranging from 383 to 431 r.p.m. One unit has variable speed control.

Air-driven units are available with driving units ranging from 1/8 to one hp. Speeds range from 400 to 1750 r.p.m., and both direct and gear-driven units are available. All units operate satisfactorily on 30 to 120 pounds of air pressure, but optimum pressure for full power is 70-90 pounds.

Mixers have a clamp attachment for attaching to tank rims or come with a separate support. Shaft angle can be changed to control mixing action. Flow patterns can be varied from a rapid tumbling-rotating action for general-purpose mixing, to a swirl or vortex for wetting finely-powdered solids quickly, to a slow rolling action for washing fibrous materials.

Shafts can be changed by means of a threaded and tapered tube and chuck. Shafts and propellers are available in a variety of materials to meet corrosive conditions.

Top entering units for both open and closed tanks are available. They range from ½ to three hp, in both direct and gear drive models. Speeds range from 1125 r.p.m. on the more powerful models to 1725 on the lower hp units. Gear driven models have propeller revolutions ranging from 383 r.p.m. on the smaller units to 431 r.p.m. on the larger units.

Side-entering mixers are available in ranges from one to 25 hp. These are available in gear and V-belt drive. The manhole flange is available in various sizes.

Morehouse-Cowles, Inc., 1150 Fernando Road, Los Angeles 65, Calif., manufacture a line of dissolvers and grinding mills.

Cowles dissolvers are available in a range of sizes and types. The rim speed of the impellers will range from 300 to 7000 feet per minute, thus making the different units useful for dispersing solids in liquids, dissolving resins in solvents, emulsifying a wide range of products and aiding in chemical reactions.

Units are available with 100, 250 and 500 gallon tanks as standard capacity. The motor and dissolving unit may be had in various sizes. These tank units have dished bottoms to eliminate corners where dead spots may occur. These bottoms may be jacketed, and will withstand pressure up to 15 p.s.i. The dissolver unit is set off-center in the tank to facilitate loading, cleaning, etc. The tank can be supplied with vapor seals where specified. Units are also available for installing in other tanks. These units can be had with motors up to 40 hp.

Other units with either manual or hydraulic lift are designed so that the containers are placed under the dissolving unit, which is lowered into the mixing tank. A manual tip-up type will clear a 48 inch tank when elevated, and containers up to 44 inches in diameter can be used. A five hp explosion-proof motor is provided.

Larger hydraulic units can be had. One hydraulic unit is available in up to 15 hp, and 1800 r.p.m. and a still larger unit of up to 40 hp can be supplied. Both of these units can be placed precisely at the level necessary in the container.

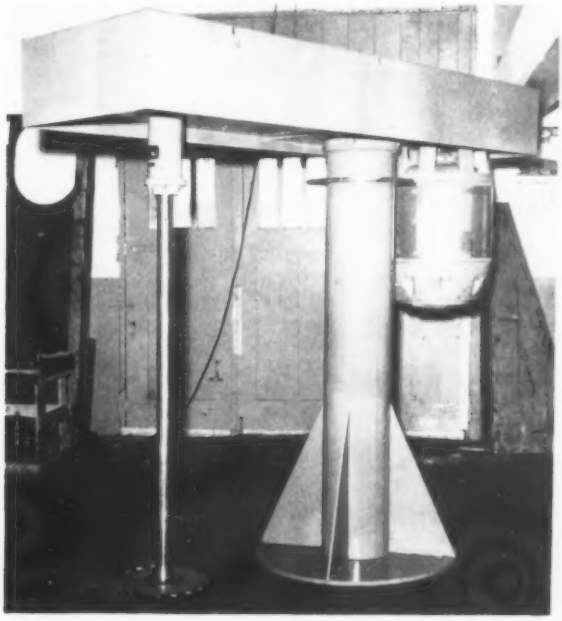
New England Tank & Tower Co., Everett, Mass., manufactures a line of top and side-entering agitators, stirrers and flow-type mixing equipment.

The agitator drives are available in three different series. Model "WT" agitator drive contains a worm gear reduction unit, fully enclosed housing and is available in seven models ranging from 1/3 to 30 hp. Models "T," "TA" and models "TB" and "TAB" both have a worm gear in combination with helical gear trains. Models "T" and "TA" are available in five models from ½ to 40 hp. Models "TB" and "TAB" are available in five models from 1/3 to 50 hp.

These units can be attached to motors having speeds of 1740, 1140, or 855 r.p.m. and shaft speeds ranging from 498 to one r.p.m., depending on the arrangement.

New England Tower & Tank Co.'s Model 3 consists of enclosed housing with motor mount which permits installation of drive and motor as a single unit.

Hydraulic lift dissolver of Morehouse-Cowles, Inc., which is designed so that containers can be placed under unit, which is lowered into the mixing tank.



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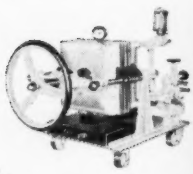
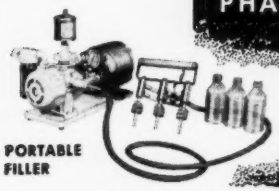


EFS-B FILTER



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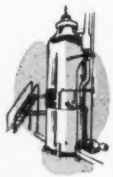

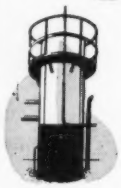

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Model "3" consists of an enclosed housing with motor mount which permits installation of the drive and motor as a unit. Standard drive is furnished with reduction units of 12:1, 24:1 or 48:1. Motor speed is either 1200 or 1800 r.p.m. and shaft speeds vary from one to 145 r.p.m.

Models "KBA" and "KMA," side-entering mixers, are available in four sizes from 1/3 to 25 hp. Model "KMA" is a direct motor driven unit with shaft speeds ranging from 1200 to 1800 r.p.m. Model "KBA" can be had with either belt or gear-drive. It has a shaft speed of 420 r.p.m., although different speeds are available. For compact units, the motor may be mounted above the reducing unit and connected with either belt or chain drive.

"Flomix" is designed for installation in a pipe line for continuous mixing, blending and reacting of liquids flowing through the line. As a general rule, two or more products are pumped into a single pipe line and there they are forced through the "Flomix" to cause complete mixing to take place. The unit is available in seven different models with motors ranging from 1/3 to three hp. The flanges of the unit are designed to fit 300 pound American steel flange standards.

Patterson Foundry & Machine Co., East Liverpool, O., manufactures a line of mixing equipment, dry blenders, coolers, digesters, dissolvers, grinding machinery, jacketed mills, liquid mixers, pan mixers, paste mixers, refinery equipment, soap crutchers, turbine mixers, vacuum kettles and many other pieces of equipment.

Illustrated is the Patterson "Unimixer." This mixing unit will handle liquids up to 200 centipoises in viscosity, light pastes and products containing semi-solids to be dissolved or processed.

This unit is available with direct or gear drive. The range of operating capacities is from 50 to 2000 gallons and the drive is available in from one to five hp. The vessel can be supplied either in plain or stainless steel. When corrosive mixtures are handled, the mixer can be lined with Porox.

The vessels are available in a number of non-corrosive commercial alloys and are electrically fusion-welded. The tanks may be equipped with cooling or heating coils. Flush type valves are mounted in the bottom of the kettle. The agitator is mounted in a removable bottom guide bearing, and also supported by a semi-flexible coupling at the top of the vessel.

Model MX 13, a direct drive, portable mixer, weighing nine pounds. Made by Standard Electric Mfg. Co. Clamp is provided for attaching to 55 gallon drums or kettles.

Standard Electric Mfg. Co., West Berlin, N. J. manufactures a line of portable mixers and agitators.

Ranging in size from 1/30 to one hp, these units are available in both direct and gear-reduction models. Direct drive units revolve at 1725 r.p.m., while the geared models revolve at speeds ranging from 420 to 431 r.p.m. All units are supplied with a clamp for attaching to kettles or 55 gallon drums. Certain models are available with explosion proof motors. Shafts are removable, interchangeable, and can be had in different lengths. Propellers are of stainless steel and are standard equipment on all models.

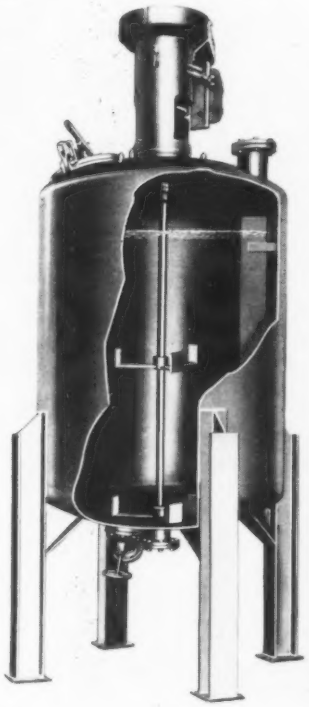
Illustrated is model MX 13, a direct drive model weighing 39 pounds. A single clamp is provided, for attaching to 55 gallon drums or to kettles. It has a 1/3 hp electric motor, and two four-inch propellers revolve at 1725 r.p.m. The unit is available in either 110 volt, 60 cycle, one phase motor, or as a 220 volt unit.

Struthers Wells Corp., Warren, Pa. manufactures a line of mixing equipment including liquid agitators and soap crutcher.

Illustrated is the radial propeller agitator mounted on a mixing vessel. A range of agitator drives is offered in speeds from 10 to 500 r.p.m., from fractional to 50 hp with stuffing boxes and seals for pressures up to 500 pounds or more. Custom made pressure vessels are available in sizes ranging from 40 to 6878 gallons. These units may be jacketed, depending upon requirements.

The agitator drives are available in four series. Series number 1 ranges from one to five hp with impeller speeds ranging from 350 to 20 r.p.m. Series number 2 ranges from one to 7½ hp with impeller speeds ranging from 350 to nine r.p.m. Series number 3 ranges from one to 15 hp with impeller speeds ranging from 350 to five r.p.m. and series number 4 ranges from one to 30 hp with impeller speeds ranging from 350 to 3.3 r.p.m. Numerous gear ratios are available for various speeds.

Radial propeller agitator of Struthers Wells Corp. mounted on a mixing vessel.



— ★ —

New Soap, Syndet Catalog

A new catalog was published recently by National Chemical Laboratories, Philadelphia. The firm's full line of potassium soap, detergents, and disinfectants is covered. Data sheets for individual products supply detailed information on properties and uses.

"Unimixer" of Patterson Foundry & Machine Co., handles liquids up to 200 centipoises in viscosity, light pastes and products containing semi-solids to be dissolved or processed.

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LIPA

A 100% active, fatty acid alkylolamide, nonionic in character. It is a light ivory color, waxy solid, with a mild, pleasant odor. LIPA is a superb foam stabilizer and also a good auxiliary detergent when used with fatty alcohol sulfates and/or alkyl aryl sulfonates. It is recommended for use in heavy duty laundry detergents, creme shampoos, rug shampoos and detergent hand cleaners.

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A special 100% active fatty acid alkylolamide (a diethanolamide condensate with a very pure grade lauric acid). It is nonionic in character. LDA is a splendid foam stabilizer for liquid dishwashing detergents. It is also an excellent wetting, foaming and thickening agent as well as a good detergent and emulsifier. Recommended too, for shampoos, hand cleaners, and for use in hard surface cleaners.

T6-A T6-B

Both products are alkanolamides, 100% active and nonionic in character. T6-A is recommended for use in bubble bath preparations for its fine foam stabilizing in the presence of soap. T6-B is recommended for use in clear and lotion type shampoos as a good thickening agent and auxiliary detergent with some emollient action.

HDA-7

A heavy duty alkanolamide with a built-in coupling agent which permits a very high phosphate tolerance (as much as 11% on an anhydrous basis). Here is the product to investigate if you are looking for a heavy duty all-purpose hard surface cleaner with a lot of punch. Does an excellent job of wax stripping without harmful effect on floor.

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A low sudsing, special, 100% active fatty acid alkanolamide. It is nonionic in character. ADT is highly recommended for use in formulating liquid scrub soaps. Among its advantages, it can eliminate the use of a coupling agent, has high viscosity and performs unusually well in hard water.

S-86

A 100% active alkanolamide. Essentially nonionic in character with good alkaline stability. Specially recommended for use in textile scouring, dye leveling and similar applications. S-86 provides good detergency for both cotton and wool. S-86, in addition, also offers some advantages for use as a stabilizer and thickener.

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PRODUCTION Clinic

By E. G. Thomssen, Ph.D.

THOSE of us who have been associated with the soap and chemical specialties industries for a long time have seen many improvements in the quality and marketing of these products. Many of us remember clearly the time when items such as medicinal soaps, disinfectants or insecticides were promoted and sold upon claims that existed only in the minds of the manufacturers or their advertising agencies. Such claims, naturally, could hardly be confirmed by laboratory tests.

I well remember the furor that was created just prior to the first world war when a supplier of a widely advertised disinfectant was called to account because he represented that a dilute water solution of zinc chloride possessed superior germicidal properties. He had no laboratory data to support such a claim. We have come a long way since then in constructive, regulatory legislation and improvement of products.

At a recent meeting, attended by the writer, the question of what factors are involved in the success of a new product was discussed. The conference was concerned not so much with such tangibles as processing, shelf-life, or cost of distribution of the product. These had been investigated and determined previously. The discussion dealt with the intangibles that are so vital to the success or failure of a new product in meeting consumer acceptance.

Certain of the opinions expressed at the meeting are of such importance and timeliness that they are worth reviewing in some detail. Considerations involved were: the percentage of consumers that could be expected to use the product; its value in terms of publicity; the "universality" of its appeal; acceptability of the product to the participants in the conference themselves. The product under study was a new sanitary chemical, which differed in many respects from competitive items.

The company promoting it had made limited surveys of the market and had been testing it in the laboratory and obtained the opinions of consultants. It had been distributed to employees free of charge and to local merchants upon consignment. Enthusiastic reports as to its efficacy came from those who received free samples. Opinions of this type usually are questionable, since persons receiving an item free of charge, usually report favorably. They fear that an honest opinion may offend. The goods on consignment moved fairly well.

Based upon this survey, it was proposed that the product be packaged in considerable volume. It had met with considerable sales resistance as distribution was expanded. The purpose of the conference was to discuss ways to overcome certain barriers and to decide whether the properties of the product warranted greater expenditure of money and effort.

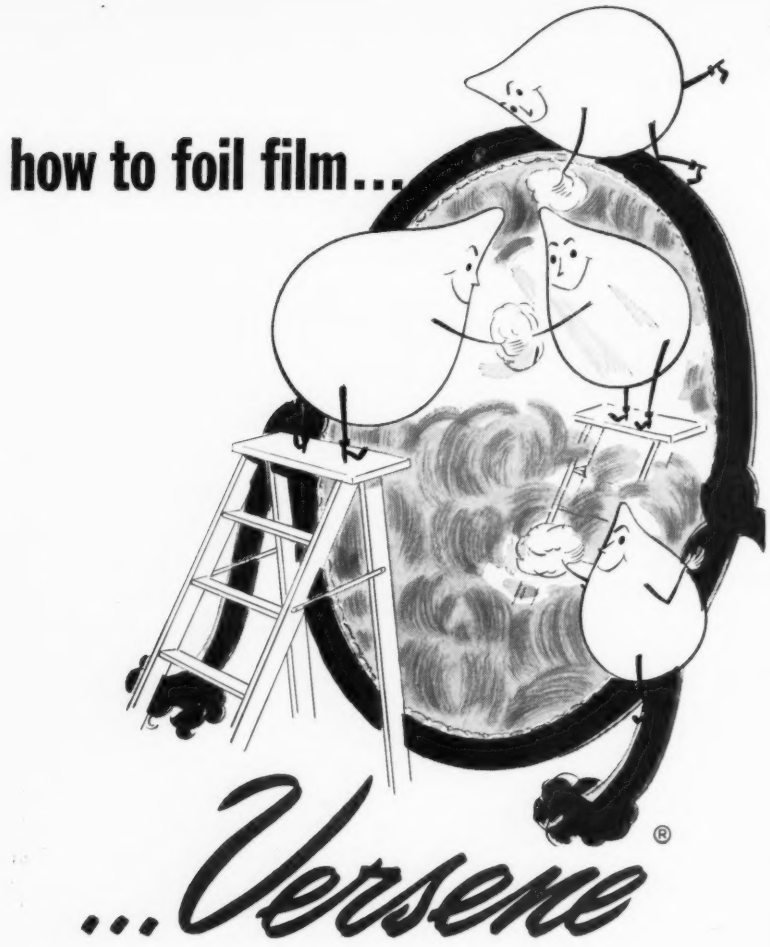
The first point to be raised was whether the product would lend itself to widespread publicity. While the product had new and desirable properties, its field of application was thought to be limited. However, there seemed to exist a good possibility that the market for the item could be expanded if it were exploited intelligently. This was predicated on the fact, however, that the consumer would have to change his usual method of applying such a product, and use a more complicated one. This raised the question: "How much would it cost to reeducate the consumer to the new method of applying the new sanitary chemical?" The consensus of the group was that once the consumer tried the new product he would immediately experience the benefits of using it. However, no definite conclusions were reached on this very difficult question of changing an established consumer habit.

Dr. Thomssen

Another question the conference was attempting to resolve was: how universally are such products used? In this connection, competition by less effective products, which appealed more dramatically to the senses, had to be taken into consideration. The odor, or absence of it, in such sanitary chemicals was involved. The new, improved product was both colorless and odorless. Competitive products had perfume and/or color added, or possessed inherent characteristic odors or colors. The odor and the color of competitive products conveyed the impression to consumers that they were more effective than the product without either of these characteristics. The product under consideration was sold on the basis that it required neither color nor odor to work effectively.

The people participating in the conference agreed that consumers are influenced strongly by appeals to the nose or the eye. They felt that the sales appeal of the product could be broadened by the addition of fragrance and color. Increased use of the new sanitary chemical could be achieved by more and better publicity and promotion on behalf of the product, those attending the conference believed.

Another question raised at



"DULL" *BUT* CLEAN

Modern soaps and syndets are expected to do more than just get things clean. They must also make them *look* clean. This can be done only when *all* of the film from "insolubles" can be removed in rinsing.

"BRIGHT" *AND* CLEAN

Versene, when added to any cleansing formulation (regardless of water hardness), prevents the formation of the film-forming insolubles that invariably cause dulling. Through the proper addition of Versene to your formula you can achieve improved performance for your product and at the same time give it a definite sales advantage over competition.

INVESTIGATE VERSENE

No matter what you make in the way of soaps, syndets, shampoos, or cleansing compounds, it will pay to investigate Versene and Versene products. Extremely stable at high temperatures through the pH range, they offer many exceptional advantages to formulators everywhere. Ask for technical data and samples.

NO CHELATION

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Chas. S. Tanner Co., Charlotte, N. C., Greenville, S. C., Knoxville, Tenn.
Kraft Chemical Co., Inc., 917 West 18th Street, Chicago 8, Illinois
Independent Chemical Corp., One Hanson Place, Brooklyn 17, N. Y.
Barada & Page, Inc., Houston, Dallas, Corpus Christi, New Orleans, St. Louis, Wichita, Oklahoma City, Tulsa, Kansas City, Mo.
George Mann & Co., Inc., 251 Fox Point Blvd., Providence, R. I.
Braun-Knecht-Heimann Co., San Francisco, Calif., Salt Lake City, Utah
Braun Corporation, Los Angeles, California
Von Waters & Rogers, Inc., Seattle, Wash., & Portland, Ore.
European Manufacturing Agent:
Resolinfabriken Aktiebolag, Helsingborg, Sweden

the meeting: Were those present using the product themselves?, brought out some embarrassing confessions. It developed that people attending the meeting were not using such an item at all. Others used a competitive product. This was not surprising to me since in the past I knew of families who received substantial incomes from products they made but did not use themselves, preferring the widely advertised preparations of competitors. A good test of how a product may be expected to fare in the open market is to place it alongside a competitive item and note which disappears more rapidly. It was generally agreed at the conference that unless the item under discussion were accepted for use by the owners of the firm marketing it, one could hardly expect wide acceptance by the consuming public.

When the meeting ended, all present concurred that intangibles are of equal importance to manufacturing problems in the success of a consumer product.

The latest information I have regarding future plans for the item is that the product has been revamped by the company's chemist. It was moving rapidly into local distribution areas in the modified form based on suggestions made during the conference.

Concrete Moisture Proofer

VISKING CORP., Terre Haute, Ind., supplies polyethylene sheets that act as a moisture-vapor barrier for concrete slabs laid on the ground and/or on the warm sides of walls where moisture may form. The sheets come in rolls 16 feet wide and in thicknesses ranging from 1/50th to 1/500ths of an inch. The film is flexible at low temperatures, tough, light weight and chemically inert.

Counters

IN many cases a quick-set, ratchet counter is an important piece of plant equipment. Veeder-Root, Inc., Harford 2, Conn., specializes in producing a full line of counters which are available from stock to

meet a wide variety of requirements.

Goggles For Protection

ACCORDING to American Optical Co., Southbridge, Mass., industrial eye accidents cost over $5.00 per employed worker annually. A. O. specializes in goggles that help to prevent most needless eye accidents. One of their safety representatives is available for consultation to promote an eye safety campaign, free of charge, upon written request.

Direct Reading Viscometers

AN accurate, rapid reading line of viscometers is made by Brookfield Engineering Laboratories, Stoughton, Mass. They are adaptable to any problem from one to 32,000,000 centipoises, operate at different speeds and are explosion proof. An illustrated catalog is available to those interested.

Supporting Lab Jack

CENTRAL Scientific Co., Chicago 13, Ill., handles a quick and easy to use, laboratory jack. It is useful as a general laboratory support that is adjustable through an elevation range of seven inches. Not only is time saved by its use but it prevents frequent breakage of laboratory glassware. It is made of aluminum or stainless steel and controlled by a large plastic knob. Circular 1213 describes it fully.

Portable Bag Closer

A HIGH speed, low-cost, portable bag closing machine is being marketed by Dave Fischbein Co., Minneapolis, Minn. The unit weighs 10½ pounds and operates on normal electrical current. The machine will stitch cloth or paper bags and in various sizes.

—★—

New Carbide Bulletin

Aminoethyl ethanolamine, a raw material for cationics and intermediate for sequestering agents and insecticides, is described in a four-page technical bulletin issued recently by Carbide and Carbon Chemicals Co., 30 East 42nd Street, New York 17. Information is supplied on properties, specifications, shipping containers, safe handling practices, and actual and suggested applications. Included are 21 literature references. Technical bulletin F-6455 A and further information concerning prices, delivery are available from Carbide.

—☆—

Small Morehouse Mill

A small, light weight, all stainless steel mill designed for laboratory control work, product development, and pilot plant and small batch production, was introduced recently by Morehouse-Cowles, Inc., Los Angeles. Designated "SS-200" the unit is 23½ inches high and 8¼ inches wide, features non-contaminating grinding discs of aluminum oxide, and a ¾ horse power motor, explosion proof or totally enclosed, available in two- or three-phase only, for either continuous or intermittent operation. It has a throughput rate from one to three gallons per hour and handles corrosive materials.

"Make-Do" Mixing
Can Cost You Money!
Loss of formula uniformity in your mixed products can be very costly. It can undo years of promotional selling, destroy customer confidence, and lose present and future sales.
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UNIFORMLY MIXES...
• SOAPS and DETERGENTS
• SWEEPING COMPOUNDS
• PHARMACEUTICALS
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• DRY POWDERS
• OTHER CHEMICALS
The Marion Mixer with its EXCLUSIVE Mixing and Blending action is turning out TOP QUALITY Mixed Products for Chemical Manufacturers everywhere. Its simple, efficient design is rugged enough to handle any volume of mixing large or small . . . and at the same time, it constantly SAFEGUARDS your formula mixes from loss of uniformity. Laboratory tests have proven that even trace materials can be blended into the most complicated industrial chemical formulas, and pass individual analysis tests for the most even batch distribution possible.
When replacing worn-out Mixers-Expanding your Mixing Operations-Adding new mixed products to your line, it will pay you to investigate the distinct advantages of the Marion Mixer. There is a Marion Mixer for any Chemical Mixing Operation. Write for your catalog today.
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Available in 300 lb. to 4000 lb. Batch Weight Sizes
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BIG DETERGENT NEWS

Monsanto develops superior, low-dust Santomerse from new alkyl benzene

Santomerse No. 1, Monsanto's all-purpose alkyl aryl sulfonate surface active agent, is now better than ever.

Tests reveal substantial reduction in dusting. The flake is less friable, much stronger. Compounders will find this material is easy to handle and will produce an end product of excellent quality and appearance.

The improved Santomerse No. 1 is made with a new alkyl benzene developed by Monsanto, which you, too, can use to produce a better sulfonate.

The new Monsanto alkyl benzene is less color sensitive and produces a whiter sulfonate. When sulfonated, the odor level is exceptionally low. This is an important feature for manufacturers of liquid detergents.

For details of these and other Monsanto detergent products, write: MONSANTO CHEMICAL COMPANY, Inorganic Chemicals Division, 710 North Twelfth Boulevard, St. Louis 1, Missouri. *Santomerse: Reg. U. S. Pat. Off.*

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MONSANTO
CHEMICALS — PLASTICS

Products and PROCESSES

Polishing Wax

A new polishing wax consists of grains having a center of solvent-containing compounded material and a surrounding layer of solvent-free wax. Such a granular product is prepared by spraying the molten wax mixture including solvents or thinners through a nozzle under pressure supplied by compressed air, steam or mechanical means. Compositions may incorporate hard wax (crude montan, carnauba, or shellac wax), a paraffin (ozokerite or ceresin) and a solvent (turpentine or benzene). British patent 682,754, A. Weil and D. Gscheidle.

—★—

Protein in Detergents

Solid dry surface active agents for use as detergents are started from solutions of hard-to-crystallize salts of high molecular sulfuric esters or sulfonates. Suggested are salts of sulfuric esters derived from secondary alcohols, such as "Teepol", containing secondary sodium alkyl sulfates. Protein is added, which is decomposed or modified, or its hard-to-crystallize derivatives, having a melting or decomposing point about 100°. The mixture is then dried. Drum drying is suggested. The protein used must be capable of being dehydrated and must be soluble or dispersible in the solution to be dried. Casein is suitable for such use. During drying the pH should not drop below seven. Dutch patent 76,296, N. V. de Bataafsche Petroleum Maatschappij, through *Chem. Abstracts*, vol. 49, p. 7272.

—★—

Better Light Oil Recovery

An improved system for the recovery of light oil from coke oven gas has been developed by Rust Engineering Co., Pittsburgh, Pa., and installed at the Midland, Pa., works of Crucible Steel Co. of America. Said to increase recovery by more than 10 percent, the system uses only one of the two existing absorption towers. In addition, a high recovery rate per unit of power consumed is claimed.

Light oil recovered by Crucible is sold in three commercial grades: nitrogen grade benzene for which the detergent industry is the biggest tonnage user; nitrogen grade toluene, used principally in solvents and explosives; and mixed xylenes, used in solvents.

—★—

New Alcohol Sulfate

A new modified alcohol sulfate, "Sipex 7W", was introduced recently by American Alcolac Corp., Baltimore, Md. The product is said to combine good grease emulsifying properties with good foaming power, especially in hard water. In addition to its use as a bubble bath ingredient, it may be applied in car washing, floor cleaning, hand dishwashing, and rug and upholstery cleaning. "Sipex 7 W" is available in multi-drum quantities. Samples and data sheet may be obtained from Alcolac's development department at 3440 Fairfield Road, Baltimore 26.

—★—

Purified Anionics

Anion-active wetting agents are purified by converting an aqueous suspension of the wetting agent into foam by mechanical means, continuing the foaming operation until foamed surfactant particles begin to agglomerate, allowing the foam to settle, and separating it from the water layer. In an example 6000 grams of paste sodium butyl naphthalene sulfonate are mixed with 1500 cc of water in a 20-liter stirring vessel. The mixture is turned into lather by five minutes of intensive stirring with introduction of air. In another minute, granulated foam is formed. After a settling period of 30 minutes, 1500 grams of dark-brown aqueous layer can be drawn off, and an additional 500 cc after two hours. The foam collapses, and a bright sodium butylnaphthalene sulfonate product is recovered. By this treatment the dry substance is reduced from 65.2 percent to 63.6 per cent, the alcohol soluble constituents are increased from 60.5 percent to 61.6 percent, Na_2SO_4 is reduced from 1.7 percent to traces, NaCl from 0.42 percent to 0.14 percent, and the free NaOH is reduced from 1.3 percent to 0.41 percent. German patent 825,258, Chemische Werke Huels, G.M.B.H.

—★—

New Tamms Silica

A new soft amorphous silica was announced recently by Tamms Industries, Inc., Chicago. Trade named "Dustex Micro-Silica", the product's particle range is said to be one to 15 microns (98 percent minus 10 microns). In addition to a large surface area "Dustex" exhibits a low pH value and high oil absorption.

—★—

Improved "Santomerse"

"Santomerse" No. 1, all-purpose alkyl aryl sulfonate has been improved, Monsanto Chemical Co., St. Louis, reported recently. Reduction in dusting and a stronger flake are claimed to make the product easier to handle and to result in an improved end product.

The new "'Santomerse" No. 1 is made from a recently developed alkyl benzene which is less color sensitive and produces a whiter sulfonate, Monsanto says. When sulfonated, its odor level is low and it is suggested by the manufacturer as a desirable primary material for liquid detergents.

—★—

Optical Bleaches Described

"Tinopal" optical bleaches, their characteristics and working properties, are covered in a technical bulletin published recently by Geigy Industrial Chemicals Division of Geigy Chemical Corp., New York. The bulletin is confined to the "Tinopals" intended for use in soaps and detergents.

spotlight on

stability
in oleic acid

Emersol® 221 White Elaine
eliminated breakdown of waterless hand cleaner

If you want your products to have maximum protection against separation, breakdown, or deterioration, then this experience of one of our customers may be of value to you:

Case History No. 35-21 . . . A large manufacturer of waterless hand cleaners had numerous complaints on the separation of his product during normal shelf-life and use. Since a double-distilled oleic acid was a major part of the emulsifier in his formulation, he investigated our claims of superior stability for Emersol 221 Low Titer White Elaine.

Prolonged aging tests soon showed that Emersol 221 eliminated the breakdown of his cleaner even over abnormally long storage periods. Furthermore, his product stayed fresh and appealing longer because of its increased resistance to yellowing and rancidity. And since Emersol 221 costs no more than competitive double-distilled oleic acids, this substantially greater "sales-appeal" was achieved at no extra cost.

Whatever products you are producing, they too will possess maximum stability when you use an Emersol Elaine. Because this includes resistance to yellowing, resistance to rancidity, and resistance to breakdown or deterioration, your products will keep that "just-made" appearance substantially longer. And since Emersol Elaines cost no more than competitive grades, why not obtain this valuable competitive advantage by buying all your oleic acid from Emery?

Emery

Fatty Acids & Derivatives
Plastolein Plasticizers
Twitchell Oils, Emulsifiers

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New York; Philadelphia; Lowell, Mass.; Chicago; San Francisco; Cleveland; Ecclestone Chemical Co., Detroit
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Export: 2205 Carew Tower, Cincinnati 2, Ohio

NEW Patents

The data listed below is only a brief review of recent patents pertinent to the readers and subscribers of this publication. Complete copies may be obtained by writing to the publisher of this magazine, Mac Nair-Dorland Co., 254 W. 31st Street, New York 1, N. Y., and remitting 50c for each copy desired. For orders received from outside of the United States the cost will be $1.00 per copy.

No. 2,707,695. Composition Comprising Cyanamide or Dicyandiamide for Forming Aerosols and Method of Making Same, patented by Armand Jean Courtier, Meudon, France, assignor to S. A. des Manufactures des Glaces et Produits Chimiques de Saint-Gobain, Chauny & Cirey, Paris, France. A method of making a fumigant cartridge is described that comprises melting a thermally vaporizable fumigant with ammonium nitrate and dicyandiamide in a proportion of 75 30% by weight of dicyandiamide and 25-70% by weight of ammonium nitrate relatively, the remainder to make 100% being mainly composed of the fumigant, emulsifying the mass by agitation thereof, and solidifying it.

No. 2,708,157. Abrasive Cleanser and Method of Scouring surfaces, patented by Alfred C. Houser, Barrington, Ill. The patent covers a household-type abrasive cleanser in the form of a dry powder, comprising essentially a mixture of water-insoluble abrasive material and a detergent material. Both said abrasive and said detergent are light in color and suitable for use in scouring the surfaces of household objects such as bathtub and kitchen utensils, and contain from .1 to 2 parts by weight of powdered, water-dispersible ultramarine blue per 100 parts of said mixture.

Disclosed is also the method of scouring a surface characterized by distributing an abrasive cleanser over said surface together with sufficient ultramarine blue to visibly color said cleanser, wetting the area to which said cleanser and ultramarine blue is applied to disperse said ultramarine blue and thereby color said area blue, and scouring said area until said blue color substantially disappears.

No. 2,708,185. Detergent Compositions, patented by Daniel Stewart, Broxburn, West Lothian, Scotland, assignor to Scottish Oils Limited, Glasgow, Scotland. The patent covers a process for the production of a detergent composition suitable for the removal of oily materials from surfaces and particularly for the removal of mineral oil and sludges from the hands and other parts of the body. The process comprises sulphating a shale oil distillation fraction boiling within the approximate range of 270°C.-360°C. with strong sulphuric acid in an amount constituting 10-20% by volume of said distillation fraction, neutralizing the product with an alkali metal base to produce alkali metal alkyl sulphates of low solubility in water and admixing the said alkali metal alkyl sulphates with kieselguhr as a filler.

No. 2,708,640. Toxic Coating Composition and Method of Applying said Composition to Wood, patented by Wayne K. Davis, Oakland, Calif. The patent teaches a method of treating wood structure as a protection against termites, fungus and the like, which comprises applying to at least a portion of the porous surfaces of the wood, a semi-stable, highly viscous, self-sustaining oil-in-water emulsion. The emulsion consists essentially of an oil soluble fungicide and insecticide, a major amount of oil, a minor amount of water, and an emulsifying agent, in a coating of the order of one-half inch thickness, whereby the emulsion will slowly break down and the fungicide and insecticide in oil solution will be absorbed in the wood over a period of days.

No. 2,708,624. Method of Treating Plants, patented by Frank Earl Denny, Yonkers, N. Y., assignor to Boyce Thompson Institute for Plant Research, Inc., New York. A method of retarding the growth of plants is discribed which comprises contacting the plant while in at least a partial dormant state with a compound of the group consisting of p-bromodiphenyl ether, p-bromopropyl phenyl ether, o-nitroanisole, o-nitrophenetole, ethyl anisate, and isoeugenol methyl ether in such concentration that the growth of the plants is effectively retarded.

No. 2,709,648. Herbicidal Composition and Method Employing Mixtures of a Polychlorophenoxy Compound with a Phenyl Dimethyl Urea, patented by Truman C. Ryker, Wilmington and Dale E. Wolf, Hockessin, Del., assignors to E. I. du Pont de Nemours & Co., Wilmington, Del. A herbicidal composition is covered containing, in admixture with a herbicidally active polychlorophenoxy compound selected from the group consisting of pentachlorophenates, 2, 4, 5-trichlorophenoxyacetic acid, its salts, esters and amides, and 2,4-dichlorophenoxyacetic acid, its salts, esters and amides, a herbicidally active phenyl dimethyl urea compound selected from the group consisting of 1-p-chlorophenyl -3, 3- dimethylurea, 1-phenyl -3,3- dimethylurea and 1- (3,4-dichlorophenyl) -3, 3- dimethylurea said herbicidal composition containing said admixture of said herbicidal compounds in a herbicidal concentration; and wherein said herbicidal compounds in said admixture are mutually activating and produce a synergistic herbicidal effect.

No. 2,709,683. Composition for Producing Detergent Polyglycol-Phenol Condensation Products, patented by Bernard R. Sarchet, Beaver, Pa., assignor to Koppers Co., Pittsburgh, Pa. The patent covers a composition of matter consisting essentially of a liquid mixture of di-tert-butyl-meta-cresol and nonylphenol containing about 30 to about 70 per cent nonylphenol and the balance di-tert-butyl-meta-cresol.

No. 2,709,684. Detergent Composition Containing Caking Preventive, patented by Allen H. Lewis, Berkeley, and Donald F. Searle, Napa, Calif., assignors to California Research Corp., San Francisco, Calif. A particulate non-caking solid detergent composition is disclosed in which the effective detergent ingredient is a sodium salt of a monoalkyl benzene sulfonic acid containing from 9 to 18 carbon atoms in the alkyl chain. Each 100 parts by weight of said detergent composition contain from about 10 to about 95 parts by weight of said salt, the remainder of said 100 parts being essentially inorganic sodium salt builders, and from about 1.0 to about 10.0% by weight of sodium salt of a monohydroxybenzene sulfonic acid, based on the whole composition including detergent and builder ingredients.

No. 2,709,685. Non-Caking Detergent Composition, patented by Allen H. Lewis, Berkeley, and Donald F. Searle, Napa, Calif., assignors to California Research Corp., San Francisco, Calif. The patent describes a particulate non-caking solid detergent composition in which the effective detergent ingredient is a sodium salt of a monoalkyl benzene sulfonic acid containing from 9 to 18 carbon atoms in the alkyl chain and present in each 100 parts by weight of said detergent composition in the amount from about 10 to about 95 parts by weight, the remainder of said 100 parts being essentially inorganic sodium salt builders, and from about 1.0 to about 10.0% by weight of sodium salt of monochlorobenzene sulfonic acid, based on the whole composition including detergent and builder ingredients.

No. 2,709,686. Non-Caking Detergent Composition, patented by Allen H. Lewis and Richard D. Stayner, Berkeley, Calif., assignors to California Research Corp., San Francisco, Calif. A particulate non-caking solid detergent composition is covered each 100 parts by weight whereof contains from about 10 to about 95 parts by weight of sodium salts of monoalkyl benzene sulfonic acid containing from 9 to 18 carbon atoms in the alkyl chain as the effective detergent ingredient. The remainder of said 100 parts is essentially an inorganic sodium salt builder and from about 1.0 to about 10.0% by weight of a sodium 2-hydroxyalkane sulfonate having from 2 to 6 carbon atoms in the alkane portion, based on the combined weight of said detergent and builder.

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An Acetal resembling the aroma of Reseda Mignonette. It is a valuable addition to all floral bouquets, and as a modifier for the purpose of rounding off all types of compositions.

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SOAP PLANT *Observer*

By John W. McCutcheon

EMPLOYEE appropriation of trade secrets and a specific case in which a business was started on just such a basis was mentioned in this column last month. We should like to elaborate on the subject at this time for several reasons. First, an employee has certain rights where trade secrets may be involved and, secondly, sometimes it is not easy to define just what a trade secret is. Simply because an employer thinks he has a trade secret does not make it so. It may be a trade secret to him only because he doesn't know what others are doing in the field.

For example, a non-technical man may blend chemicals in a certain way and come up with a product that does a good job in a particular field of use, say, the baking trade. An employee, who is a chemist, sees how these materials are put together and regards the process as purely a physical one of mixing. He can honestly see nothing in the process that is not well known and established in the trade. Therefore, he may consider he is not doing any harm in going out and doing likewise.

Legally the matter revolves about the point as to whether or not the formulation and processing did or did not involve a trade secret. In a chemical process this may be a tricky matter to decide for the simple reason that the court may not be technically capable of understanding the fine points involved. Also, the matter may be legally correct but morally wrong. The existence of a patent may or may not simplify the matter. Frequently it does not offer the protection necessary to prevent pirating of an idea, particularly if the idea is a simple one which on disclosure leads to the ejaculation: "Why didn't I think of that?" Usually,

they do, but in some roundabout way.

On the other hand, a trade secret often can not be laid out and defined even to an employee, and he may walk off with it without even knowing he has done so. In the particular situation referred to above, there is good reason to believe this may have been the case.

The writer some years ago had an embarrassing experience of this same sort. We had been developing a procedure of glycerine lye treatment which we thought was rather unique. The writer eventually presented a paper on the subject before a chemical society. The subject was pH control in lye treatment. Now pH was not new, nor was lye treating by such various chemicals as ferric chloride, alum, etc. In fact, the writer felt certain nothing presented in the paper was new. A belief concurred in by the company's technical director, who reviewed the paper before presentation. However, some months later, when the head office asked for a few prior references on the matter to establish the priority of the research, it was very embarrassing to find out that none existed as a thorough check of the abstracts journals showed. Here, was a case in which, unwittingly, information and data had been given away that the company had paid money to obtain. Of course, in this case the matter was not of great significance.

Companies who sponsor research programs and/or publish papers are doing the same thing. But it does illustrate the point that familiarity breeds contempt and an employee may not know the value of the simple operations he carries out daily, until he finds someone who will pay him money for them.

The employee should not be censored too harshly for not recognizing these either. In many cases he, himself, may be responsible for their development and, therefore, feel a proprietary interest. An employee's value to his company (and to his company's competitors) increases with the trade know-how he accumulates. The hiring of personnel from competitors makes it virtually impossible to maintain so-called trade secrets for any great period, even when high moral standards are maintained by all concerned. The growth of the detergent industry is based on just such a broad exchange of ideas.

On the other hand, the manufacturer, particularly the small man, who produces a chemical product even though he is not a chemist, should have protection against the piracy of his ideas or he may find that years of study and work can be swept away in a few short weeks. The following suggestions may be of help:

(1) Maintain legal advice on a retainer fee basis.

(2) Maintain chemical consulting advice on a level as high or higher than product research being done.

(3) Have key employees sign restrictive contracts for limited periods to establish unequivocally that there are trade secrets involved.

(4) Be alert to possible collusion among employees and maintain as close and pleasant personal contact as possible.

(5) Maintain well-defined departments of activity to avoid overlapping of duties.

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Liquid 50%, Regular and Low—Chloride Grade
Flake, Solid and Ground, 76% Na_2O

CAUSTIC POTASH

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SODA ASH

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Natural, Light and Dense

3
ALKALIS

18
GRADES AND FORMS

53
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With Westvaco as a supplier you will be sure of prompt delivery from our ample, expanding facilities. Our wide choice of packaging . . . from a bag to a barge . . . minimizes your inventory and warehousing problems . . . saves you time and money.

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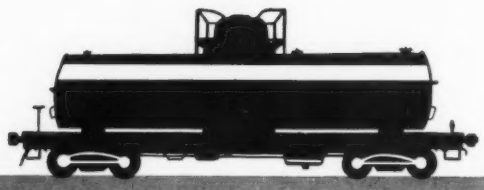

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(6) Maintain a progressive research program.

The last point probably is more important than all the others combined, but is not always a practical solution for a small manufacturer.

* * *

ABSTRACTS of scientific papers are the life blood of chemistry. They are the happy hunting ground of old and young alike, and their maintenance is absolutely essential to and synonymous with progress. Hardly any trade journal exists that does not carry abstract forms of new information, such as those pertaining to trade marks, patents, processes, etc., for handy reference. Each of these covers a specific phase or viewpoint. Some are simple monthly summaries to keep the reader of the publication up-to-date in a general way. Nearly all give the prime reference so that the complete story may be obtained if desired. The abstract is generally written with a view to extracting the main purpose and object of the original article with just a hint here and there as to the extent of the information covered. There is no attempt to correlate these over long periods of time. They are designed for frequent periodic checks. If one misses checking a number he probably does not go back.

Abstracts which do attempt to furnish references over the years are very elaborate affairs and *Chemical Abstracts* is the principal one in existence today. The cost of this gigantic work is enormous—probably half a million dollars a year. The scope and purpose of the abstract differs radically from those mentioned above. For example, *Chemical Abstracts* tries to give a brief summary of the meat of the paper, but in addition also attempts to include all technical data so presented. Abstractors are particularly advised to include new products, formulae, chemical reactions, physical constants, etc., where given. This is of great value in foreign language papers as the meat of the paper is often available almost intact without recourse to the time consuming job of reading the original. The indices carried back year by year and in ten year groups are most essential for any thorough literature search. Dr. J. A. Crane who has been editor of this great publication over many years should be given a special yearly medal of merit for his contribution to chemistry. In between his extremely busy schedule, he still has time to write a humorous little pamphlet for his abstractors, answer specific enquiries, oversee an extensive office staff at Ohio State University and plan a new building to house this ever expanding facility. The writer frankly cannot see how he does it!

As the chemical literature becomes more and more complicated there is a growing need for mechanical coding of some sort. For years now, studies have been going on as to ways and means of doing this. So far, they have not resulted in the adoption of any concrete plan, which is as it should be. Whatever plan is adopted finally will be a mighty complex affair at best and will not be easily changed once set. The writer has confidence, however, that when this system gets rolling, searching the chemical literature will be taken out of the hands of the individual and will become a process handled on a fee basis by specialists at strategically located centers across the country.

* * *

THE Foreign Agricultural Trade "Digest," which comes over our desk monthly, is published by the Foreign Agricultural Service of the U. S. Department of Agriculture, Washington 25, D. C. This is a very fine addition to the USDA's list of publications, but we do feel that the title "Digest" is unfortunate and conflicts with the similarly titled periodical of the Association of Amercan Soap and Glycerine Producers which has been published for many years. It is true that the subject matter of the two "Digests" does not overlap, but the writer is sure that there are bound to be some headaches in the library sections of many companies because of similarity of titles.

Stuepel Detergent Book

Synthetic Washing and Cleansing Agents (Synthetische Wasch- und Reinigungsmittel) by Helmut Stuepel, Konradin Verlag Robert Kohlhammer, Stuttgart, Germany, 1954, 568 pages, clothbound, 9 3/8 by 6 1/4 inches, price DM 8. The author addresses this book to the manufacturers of synthetic washing compounds, setting it strictly apart from texts on textile auxiliaries and basic synthetic detergents. The fact that the syndet, the ready to use compounded household detergent, originated in the textile auxiliary field is today of purely historic interest. Unlike the textile auxiliary, the consumer product depends for success not only on the choice of the right basic detergent but equally on the right inorganic or organic builders, on hygroscopicity, consistency, texture, color and odor properties of the final product. None of these characteristics play an important role in the industrial detergent. For this reason new laboratory testing procedures and new production methods had to be devised to make efficient and appealing laundry products. Dr. Stuepel collates in the present volume a vast amount of carefully screened and expertly classified information pertaining to this youthful industry.

Chapter I defines the washing and cleansing process, classifies soils and soiled fabrics, deals with fiber-soil attraction, and with relations between molecular structure and properties of a detergent substance.

Entitled "Synthetic Wash-Active Substances," Chapter II classifies basic detergents, gives different syntheses and practical production methods, describing such important processes as sulfonation in detail, and includes an appendix listing basics by trade names and chemical compositions.

The third chapter tells how to build synthetic washing and cleaning compounds starting from the

(*Turn to Page* 165)

ANOTHER BIG ORDER OUT ON TIME, THANKS TO RHEEM FIBRE DRUMS!

Time is money! That's why Rheem's distribution system, which covers more major markets faster, is so important to you.

One of the features Rheem customers value most is the ready availability of Rheem Fibre Drums that enables them to get the drums they need *when they need them.*

With fibre drum plants on the East Coast, Midwest, and on the West Coast, Rheem offers this timesaving and moneysaving availability in most major markets. In many cases, the drums can be shipped by truck and delivered right to the point of use.

And, thanks to many advances made in the manufacture of Rheem Fibre Drums, they are the ideal containers for many products which formerly required far more costly packaging methods.

For complete information on how Rheem Fibre Drums can save you time and money, write today to the Rheem office nearest you.

Did you know these facts about Rheem Fibre Drums?

1. They can be colorfully decorated, at low cost, through the silk screen process. Or, if you wish, labels may be used.
2. Special interior linings can be applied to give the proper chemical protection to a wide variety of products requiring it.
3. Special laminates can be built into the drum walls to provide an added moisture barrier without adding greatly to the cost.
4. The light weight of sturdy, durable, economical Rheem Fibre Drums reduces shipping costs. Empty drums can be nested to save space.

Switch in time, Switch to

Rheem **Fibre Drums**

About ⅓ the weight of steel—and less than ½ the cost!

801 Chesley Ave., Richmond, Calif.; 4361 Firestone Blvd., South Gate, Calif.; 7600 S. Kedzie Ave., Chicago 29, Ill.; U. S. Highway #1, Linden, N. J.; Box 6718, Sparrows Point 19, Md.

There's a PLAX Package with the ideal SHAPE for boosting your sales figures

Flexible by nature, Plax bottles make it easy for you to merchandise your product in graceful, functional contours . . . our wide range of stock shapes makes it economical, too. In addition you get a lightweight, unbreakable package that can save you hundreds of thousands of dollars in shipping costs . . . that affords a rainbow choice of colors . . . and the ideal dispensing method, whether it's a spray, drop-by-drop, controlled pouring or direct application. Consult Plax for the best in convenience packaging.

PLAX CORPORATION

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IN CANADA: Plax Canada, Ltd., Montreal and Toronto

PLAX

In plastic bottle packaging, only Plax offers continuous research, complete design service, and long experience.

Made with the skill that assures protection

This 16th Century helmet displays the craftsmanship of medieval armor-makers. Expert fitting and positioning permitted mobility and visibility, while intricate carving brought distinctive, attractive appearance. Studied design and careful construction assured maximum protection.

Jones & Laughlin Steel Containers provide dependable protection for your products. They are built of sturdy, high-quality J&L Steel Sheet. Careful manufacture assures accuracy in all fittings and closures. J&L containers have a trim appearance which can be decorated attractively with colorful designs and illustrations by means of J&L's lithographic process.

Coatings and lacquers are evenly applied—both inside and outside. J&L pails and drums are chemically treated to keep all surfaces clean and dry.

Depend on J&L Steel Containers for the protection your products require.

Order them through plants in leading industrial centers. You will find J&L service prompt and efficient.

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STEEL CORPORATION

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J&L STEEL

Packaging NOTES

New Gold Foil Wrap for "Lux" Soap

THE adoption of a gold foil wrapper for its new "Lux Toilet Soap" was announced late last month by Lever Brothers Co., New York. Believed to be the first and only popular priced American toilet soap to adopt a metallic foil wrapping, "Lux" has also been altered in appearance and in its characteristic scent.

New gold foil wrapper for bath and hand sizes of "Lux Toilet Soap" was introduced last month by Lever Brothers Co., New York. New wrap adds to sales appeal and serves to seal in moisture and fragrance.

Other soap makers are understood to be considering adopting the foil wrapper idea, and at least four other such soaps are scheduled to make their appearance in new foil wrappers. The foil soap wrapper idea is not new, both "4711 White Rose Glycerine Soap" and "Neutragena" a transparent, Belgian made soap, are wrapped in aluminum foil. Both, however, are considerably more expensive than "Lux."

The new gold foil "Lux" wrapper retains the traditional sampler design for the name, but is somewhat streamlined.

The foil for the new wrapper is supplied by Reynolds Metal Co. The blue and white design is applied by gravure printing.

In addition to enhancing the appearance of the soap's wrapper, the new foil is also said to protect the new perfuming material adopted for the soap, as well as safeguarding its increased white appearance by protecting it from discoloration. Other changes in "Lux" include a new shape with rounded corners designed to make it easier to use by fitting the hand better.

"Lux" bars, of which more than five billion have been bought in America in the 30 years since its introduction here, are first wrapped in a waxed tissue innerliner. This aids in sealing in moisture and perfume. Over the innerliner a cardboard wrapper is used to protect against damage in handling. Finally, the gold foil wrap is employed. The foil itself is bonded to a special resilient paper to give the foil a fresh appearance and feel.

The new "Lux Toilet Soap" wrap represents quite a change from the plain paper wrapper with an onion skin inner wrap that was used 30 years ago.

"Lux" in the new gold foil wrap is now being distributed nationally in both regular and bath sizes and is available in food, variety, department and drug stores. The regular size sells for around three cakes for 25 cents and the bath size is two for 25 cents.

—★—

New Reseal Closure

A new press-on vacuum closure has just been introduced by Owens-Illinois Glass Co., Toledo. The new cap, tradenamed "Vapak," is said to be easy to remove and replace as an airtight seal. Available in a range of sizes, it is claimed to give absolute airtightness.

A rotary sealing machine has been developed by Owens-Illinois to handle the "Vapak" closure at a speed of more than 700 jars per minute. Straight line machines are used where high speed is not essential.

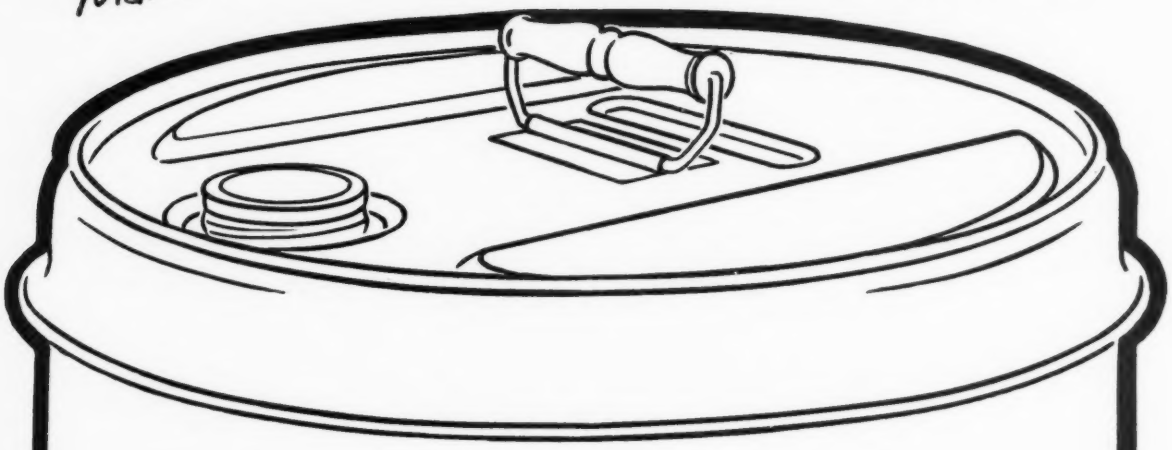
—★—

Cont. Can Appoints Wiesley

D. B. Wiesley has joined Continental Can Co., New York, as general manager of production engineering for the metal division, it was announced last month. For the past 16 years Mr. Wiesley had been connected with American Can Co., New York, where he served in development engineering, operating management, and industrial relations work.

D. B. Wiesley

Make friends with Continental's steel containers



ICC-approved closed head
STEEL DRUMS

The fact that Continental closed head steel drums meet Interstate Commerce Commission specifications for shipping inflammable and other dangerous articles is important. Continental packaging, however, offers your products far more than rugged protection. Brightly lithographed with your name or trade mark, each container in your line becomes part of a handsome "package" family. And because customers find these cans so suitable for re-use, your sales story will keep on making good impressions for years. Let us show you how Continental drums can work for you. Call soon.

Why not order "Tripletite" paint cans, "F" style, and conventional cans when you order steel containers. We'll send them along in one freight car to shave your costs on warehouse space, shipping and inventory.

Continental makes a complete line of lug cover, flaring pails, and utility containers. Whatever your product, you'll find sizes and styles to suit your individual needs.

FOREMOST IN QUALITY AND DESIGN

Made from heavy 24- or 26-gauge steel, Continental closed head drums have a capacity of 5 U.S. gallons. Meet ICC specifications 17E and 37D. High-strength body available with straight sides or top and bottom beads. Drum top offset for easy stacking. Construction features include electric lap-weld side seam, and compound-lined, double-seamed head and bottom. Four-finger handle securely welded to top for safe handling.

Also the tops in pouring spouts and closures

CONTINENTAL CAN COMPANY

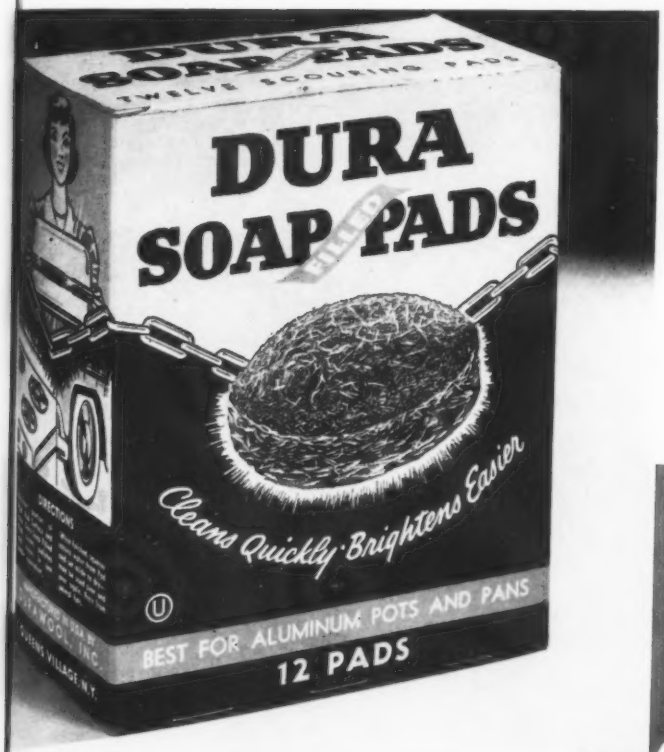
Eastern Division: 100 E. 42nd St., New York 17
Central Division: 135 So. La Salle St., Chicago 3
Pacific Division: Russ Building, San Francisco 4

Our Fiftieth Year of Tailor-Made Packaging

TAILOR-MADE PACKAGE SERVICE

What's New?

↑ New line of powdered industrial hand cleansers announced recently by Kutol Products, Inc., Cincinnati. Strong "family resemblance" has been stressed in package design. Bright, colorful packages are printed in green, white and black. The new line has been compounded to meet individual requirements of industrial employees and plants. New products include: Kutol "Supreme" and "Miracle" heavy and extra-heavy duty powdered hand cleansers; "Golden Powder", which lathers in hot or cold water; "Pure Powder" for office or plant employees; "Brisk Powder", which dissolves quickly and completely for faster cleaning action; and "Custom Powder", compounded especially for one of the world's largest manufacturing firms.

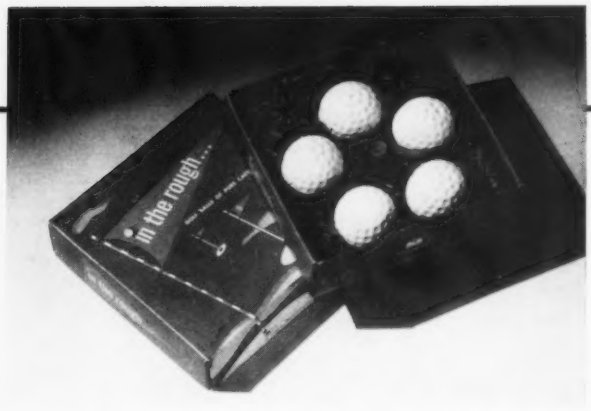


←

New soap impregnated scouring pads of Dura Wool, Inc., Queens Village, N. Y. 12 scouring pads for use on pots, pans and other metal surfaces are packaged in yellow, blue, red and white carton.

→

Newest member of the soap and detergent line of Armour and Co., Chicago, is "Chiffon Liquid". Packed in 12 and 22-ounce red and White cans, the new liquid dishwashing detergent will retail for 39 and 69 cents, respectively. Product has lemon scent.



↑ Newest novelty soap of Mem Co., New York, is "In the Rough" package of soap "golf balls" to retail for $1.00. Soap "golf balls" are set on imitation grass mat in two-color folding box. Castile soap has pine scent. Red golf tee adds touch of realism.

←

New carton for "White Rain" shampoo of Toni Co. of St. Paul, a division of Gillette Co., Boston, is produced by Robert Gair Co., New York. Three sizes of cartons hold seven, 3½ and 1½ ounce bottles of shampoo. Carton is printed in light and dark gray on ACM clay carton board. Detailed instructions for use of shampoo are printed on back of carton.

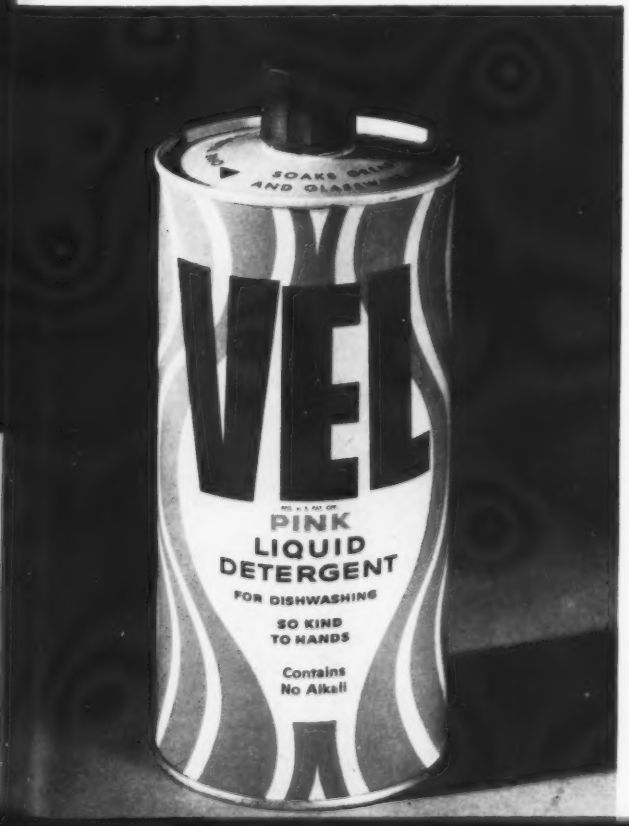
Something new added to "Palmolive" soap of Colgate-Palmolive Co., Jersey City, N. J., includes bithionol, germicidal agent made under the "Actamer" trade name by Monsanto Chemical Co., St Louis. Also changed is perfume for the toilet soap, which comes in tradional wrapper, but with name of germicide.

↓

↑ Front and rear views of polyethylene tube, newest form of packaging adopted by Sugar Beet Products Co., Saginaw, Mich., for its "SBS-30" waterless hand cleaner. "Bracon" polyethylene plastic tubes, lithographed in red, white and blue, are produced by Bradley Container Corp., Maynard, Mass. 24, five-ounce tubes come packaged in individual cases.

New packaging for "Dial" shampoo of Armour and Co., Chicago, includes seven-ounce glass and plastic bottles and 1½ ounce plastic container. Originally, "Dial" shampoo was packaged in 3½ ounce plastic container (second from right), which will continue to be used.

Pink, rose scented "Vel", first liquid detergent of Colgate-Palmolive Co., Jersey City, N. J., comes in can of matching hue. A light duty synthetic detergent suggested for washing dishes and delicate clothing, "Vel" comes in 22 and 12-ounce metal cans with red plastic cap. Lettering is blue, stripes white.



Simplicity marks design of container for new "Kwick Foaming (aerosol) Shave Cream", just announced by Avon Products, Inc., New York. 10-ounce container with dark green background and red and white design, retails for 98 cents.

CALL Ball and GET MORE THAN GLASS!

BALL CONTAINER DESIGN COUNSEL

can help you influence her choice!

Modern merchandising is 85% self-service. Does your product say "Take me!" more appealingly than your competition? You may have an *unsuspected* opportunity to step up impulse buying with a distinctively shaped glass container.

Ball "Packaging *Plus*" specialists know how to add glamour to glass—how to make your product look like a better buy! Distinction may be achieved through bottle design, a specially lithographed closure, an unusual label, or a combination of these factors. Our designers can do the entire creative job or work with your staff on technical details. There is no charge for this service to Ball customers.

A CASE HISTORY

A leading midwestern company had a *real* packaging problem. Not only did they want bottles with more "shelf appeal"; the design had to be changed to get greater efficiency from new high-speed production lines. Ball was asked to solve the problem, and *did!* The new bottle developed by Ball designers and technical specialists was such a big hit that they were asked to redesign four additional bottles. Now Ball is completing the big job of modernizing the manufacturer's *entire line* of glass containers . . . *Another instance where it paid to "call BALL first of all."*

Ask about other Ball "Packaging Plus" services . . . materials handling, processing and filling, shipping cartons—with experts in each area who can help reduce costs or increase your volume.

Ball

BALL BROTHERS COMPANY · · · MUNCIE, INDIANA

Offices in All Principal Cities

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Newly elected officers of the Bag Committee of the Packaging Institute, New York, at recent Minneapolis meeting include: extreme left, J. R. Murphy, National Container Corp., outgoing secretary who is shaking hands with Gules Nicks, Corn Products Refining Co. Glenn L. Wilkes, Shell Chemical Corp., newly elected chairman, second from right, and J. C. Crosby, Animal Foundation, Inc., new secretary and vice-chairman, second from left, look on.

Bag Committee Elects

The Bag Committee of the Packaging Institute, New York, elected new officers at its recent meeting in Minneapolis, Minn. Glenn L. Wilkes of Shell Chemical Corp., New York, becomes chairman succeeding J. R. Murphy, National Container Corp. New secretary and vice-chairman is J. C. Crosby of Animal Foundation, Inc.

—★—

Portable Label Paster

A new small label paster by Potdevin Machine Co., Teterboro, N. J., is used at Merck & Co., Rahway, N. J., for short runs of special chemicals. The coating machine applies an overall adhesive to the printed label and delivers the label to the hand of the operator. The printed side of the label remains clean. These small pasters are light enough to be carried to wherever they are needed.

—★—

New Brockway Glass Plant

Ground was broken last month for a new glass container plant to be built by Brockway Glass Co., Brockway, Pa., at Freehold, N. J. The new plant is expected to be on stream by the spring of 1956, and will employ approximately 250 people. Brockway is currently operating four plants, located in Brockway and Crenshaw, Pa.; Muskogee, Okla.; and Lapel, Ind.

G. A. Mengle, president, was present at the ground breaking ceremony, as were other company officers and members of the board.

—★—

Gair Adds to Richmond Unit

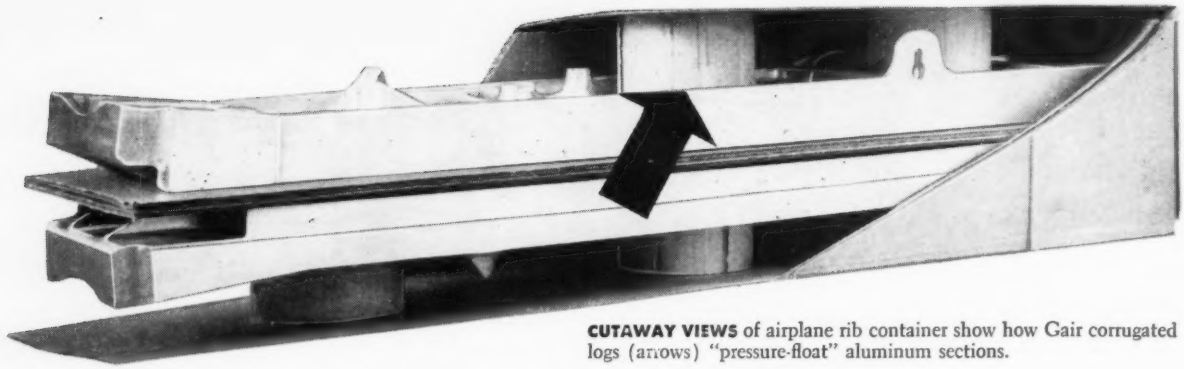
Robert Gair Co., New York, recently announced completion of alterations and additions to the Richmond, Va., plant of its Fibre Board Container Division. A new building 300 feet long, 90 feet wide and 24 feet high, houses the new corrugating unit producing A, B, and C flute and double wall board at an approximate speed of 400 feet per minute. Warehouse space for 3,000 tons of liner board and a new and more economical boiler have also been installed. Offices have been renovated and office space has been tripled. A new railroad siding runs parallel to the additional structure and permits the unloading of four cars at the same time. The city of Richmond agreed to the relocation of one of its streets to improve the plant's shipping facilities.

—★—

Barrett Trucks Bulletin

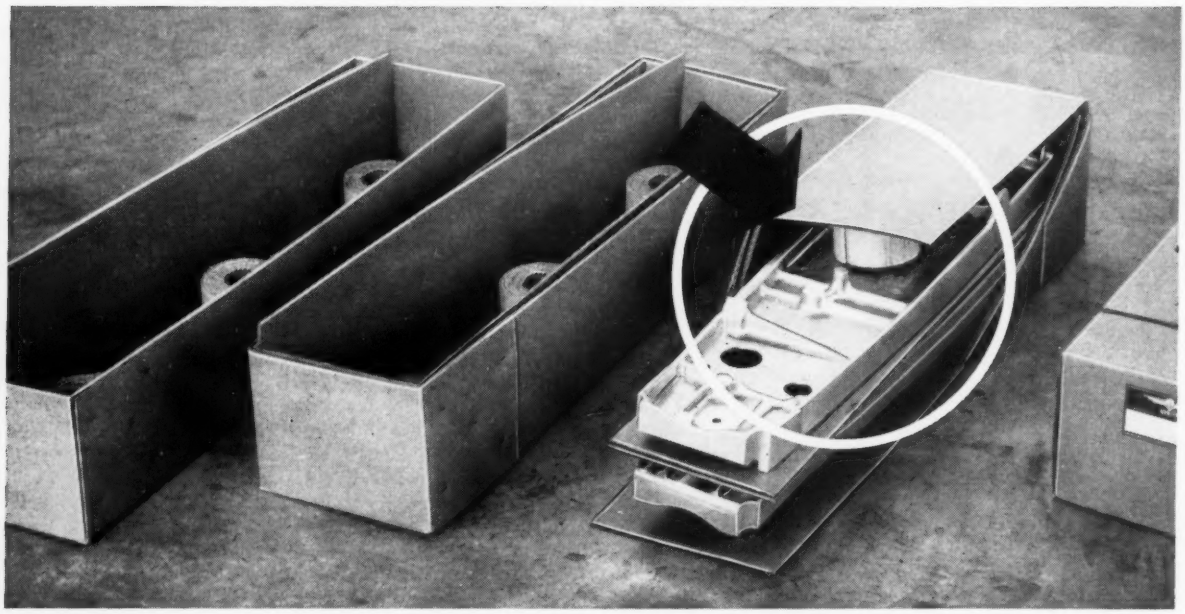
Barett-Cravens Co., Northbrook, Ill., issued a six-page illustrated bulletin covering the firm's full line of single stroke hand lift

Small Potdevin machine applies glue and delivers label to operator with slight twist of the handle. Unit made by Potdevin Machine Co., Teterboro, N. J.



CUTAWAY VIEWS of airplane rib container show how Gair corrugated logs (arrows) "pressure-float" aluminum sections.

Gair corrugated logs provide safe ride for contoured aircraft ribs



Thirty-five pounds of odd-shaped aluminum airplane rib posed quite a packaging problem for MPM, Inc., Cleveland specialists in Kellering and contouring aircraft parts.

Chief difficulty facing the Gair Container experts called in by MPM was securing the long, contoured aluminum sections inside the container to prevent damage in transit. Gair's imaginative and cost-cutting solution featured one of the industry's first uses of corrugated logs instead of intricately cut and creased packing sheets.

Six corrugated logs "pressure-float" the parts so effectively that no damage has occurred in the 1500 shipments completed to date.

Good example, we feel, of Gair's ability to come up with an out-of-the-ordinary container to solve a tough shipping problem. If you've got one that seems to defy solution, put Gair to work on it.

YOU'RE LIVING NEXT DOOR TO THE EXPERT

GAIR CONTAINER PLANTS: Atlanta, Ga. • Cambridge, Mass. • Cleveland, Ohio • Holyoke, Mass. • Jackson, Miss. • Los Angeles, Cal. • Martinsville, Va. • New Orleans, La. • Mt. Tonawanda, N. Y. • Philadelphia, Pa. • Plymouth, Mich. • Portland, Conn. • Richmond, Va. • Syracuse, N. Y. • Teterboro, N. J.

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SHIPPING CONTAINERS

FOLDING CARTONS • PAPERBOARD

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Barrett Model J single stroke lift truck, one of new models illustrated in company's new catalog.

trucks. One important change in the line is announced: capacity of the R Model truck has been increased from 3,500 pounds to 4,000 pounds.

★

Defends Drum Reuse

The National Barrel and Drum Association recently published a statement in defense of the steel drum reconditioning industry, which it represents. A three years' study of all claims for leakage arising from truck transportation of products in drums was conducted by a joint committee of members of NBDA and the National Freight Claim Committee of the American Trucking Association. The number of claims was found to be too small to be expressed by even the smallest fraction of the total number of drums transported. The claims reported, were found to be evenly distributed among new drums, reconditioned drums and used drums, which had not been reconditioned.

★

New Gair Display Carton

A new display carton designed and made by Thames River (Conn.) division of Robert Gair Co., New York, is currently introducing a new ointment by Zotox Pharmacal Co., Stamford, Conn. The folding display carton is made of "Tufbord" rigid folding paperboard, said to be extra strong while permitting reductions in thickness and weight.

New counter display carton produced by Thames River (Conn.) division of Robert Gair Co., New York, for "Triocin", made by Zotox Pharmacal Co., Stamford, Conn.

★

Miskin To MRM

Richard Miskin joined MRM Co., Brooklyn, N. Y., as sales engineer, it was announced last month.

We've got that Southern Accent

Yes, friends, we've got that SOUTHERN ACCENT, and that *accent* is on production of TOP-QUALITY Steel Pails and Drums and on SPEED of delivery . . . for SOUTHERN CUSTOMERS.

Large capacity and flexibility of production, a sizable warehouse stock of ALL popular sizes and types of Steel Pails, plus central location right in the heart of the Industrial South, assures quick deliveries when time means money to you.

VULCAN IS SERVING THE SOUTH WITH TOP-QUALITY PAILS AND DRUMS

Vulcan makes a full line of Steel Pails and Drums to meet YOUR needs—1½ to 8 gallon sizes . . . open head or closed head . . . plain covers or those built with all popular pouring openings . . . special Hi-Baked Lined to protect your product . . . Open Head Lug Cover . . . Tight Head Drum Type.

Made in the "HEART O' DIXIE"

Vulcan Pails can be colorfully lithographed with your name or sales message

Samples and prices furnished on request.

VULCAN STEEL CONTAINER CO.

Main Office and Factory

3315 N. 35th AVE. ★ (P. O. BOX 786)

BIRMINGHAM ★ ALABAMA

BENNETT

IS MY NAME...

I'VE GOT THE FACTS ON HI-BAKE PAILS

There's a world of difference between Bennett Protected and ordinary hi-bake lined pails. *It's the way they are made that counts.*

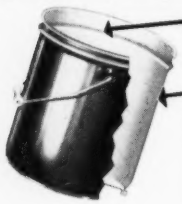
PAIL EARS . . . Bennett projection welded ears eliminate rivet crevices, a common point of failure in ordinary hi-bake pails.

SIDE SEAM . . . Bennett pails have the smoothest side seam in the industry. Free from heavy overlap and weld spatter.

BOTTOM CHIME . . . Bennett Hi-Bake Linings go all the way *through* the bottom seam or chime.

BAKING CONTROL . . . The crux of all hi-bake linings. Bennett has the latest type ovens with tolerance limits that insure a perfect product.

THOROUGH INSPECTION . . . Bennett gives your product double protection . . .



FIRST with carefully inspected, correctly applied hi-bake linings.

SECOND with *pretested* containers and superior workmanship, the result of over 40 years of experience in steel container manufacture.

Call Bennett today for help on the type of hi-bake lined pail best for your specific product. We supply lined pails for your own tests without obligation.

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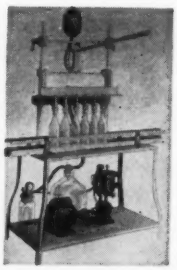
Chicago, Fred A. Jensen; **Atlanta,** Geo. E. Missbach & Co.; **Buffalo,** R. C. Gerber; **Cincinnati,** Paul Wiemer Co.; **Cleveland,** Donald McKay Smith Co.; **Denver,** Douw Fonda Co.; **Des Moines,** Frank Seitz Sales Co.; **Detroit,** A. E. Fleming Co.; **Indianapolis,** L. S. Carr; **Kansas City,** Ack Sales Co.; **Los Angeles,** A. J. Lynch & Co.; **Memphis,** The Lilly Co.; **Milwaukee,** R. L. Ferguson; **Minneapolis,** Willard N. Swanson Co.; **New York City,** Murray Oil Products Co.; **Omaha,** French Brokerage Co.; **Pittsburgh,** E. E. Zimmerman Co.; **Portland,** Cordano Chemical Co.; **Richmond,** F. V. Gunn & Co.; **St. Louis,** American Metal Barrel Co.; **San Francisco,** A. J. Lynch & Co.; **Seattle,** Carl F. Miller & Co.; **Spokane,** Pearson & Smith; **Boston,** The Truesdale Co.

"SCIENTIFIC"

portable SEMI-AUTOMATIC STRAIGHT LINE

VACUUM FILLER



- Fills Directly from Drum; No Overhead Tanks Required.
- Vials to Quarts, Glass or Tin.
- Up to 10 Spouts for Small Containers.

Quick Change-Overs. Cleans Itself, 5 minutes.

ONLY ONE OPERATOR for Loading and Filling.

LOW PRICED BENCH AND STAND MODELS

ACTUALLY PAYS FOR ITSELF IN A FEW WEEKS

WRITE FOR FREE TRIAL OFFER

Whirlwind SCREW CAPPER

Replaces Uncertain Hand Capping; Eliminates Fatigue and Worn-Out Fingers.

Any Cap — Any Container — Perfect Sealing!

Adjustable Tension Device Controls Cap Tightness. Portable, Flexible, Fast; Easy to Operate.

Can You Afford to Be Without It?

ACT NOW! Send Sample Caps for FREE TRIAL.

SCIENTIFIC FILTER COMPANY

59 Rose St. New York City 38, N. Y.

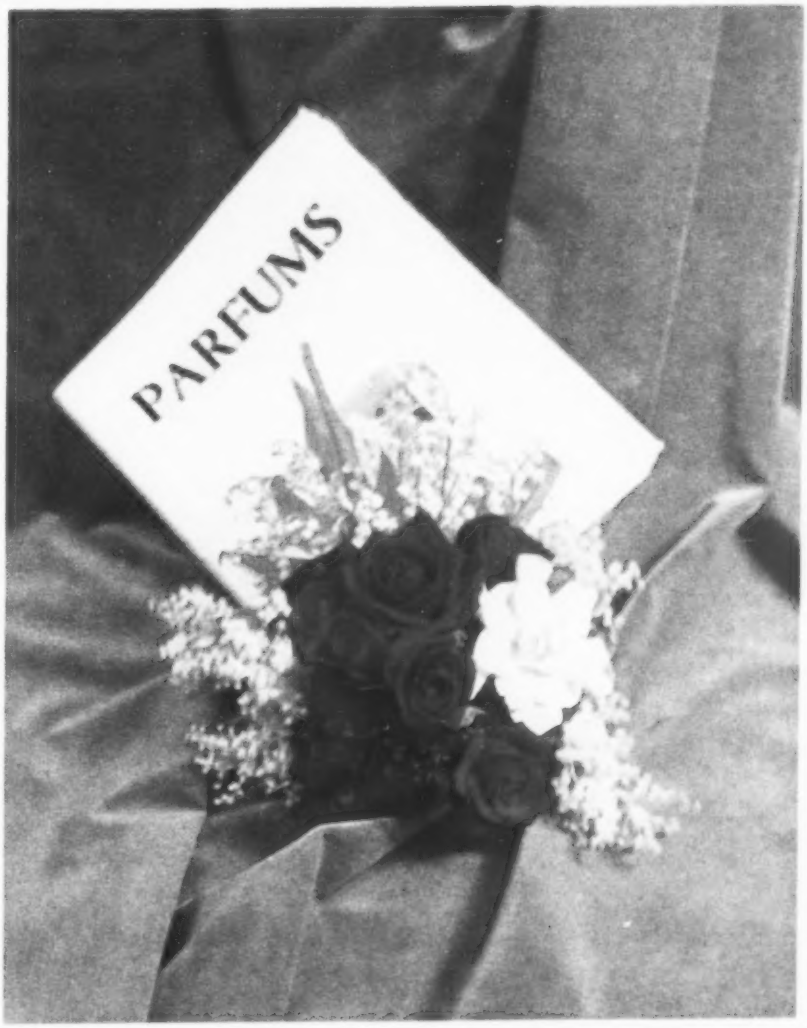
Spray Tower For Sale

This unit is a direct gas fired, concurrent, stainless steel spray tower 10½ feet in diameter and 36 feet high. Complete unit includes pump, piping, settling boxes and cyclones. Bolted sections are easily dismounted. Unit is located at Cleveland, Ohio.

For full information write or wire

Hunt Mfg. Co.

Cleveland 4, Ohio CEdar 1-2113



Roure-Dupont, Inc.

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TURN THE PAGE

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FOR THE PERFECT FRAGRANCE
CUSTOM-MADE FOR YOU,
CONSULT

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SINCE 1820 MAKERS OF THE FINEST PERFUMES

Sole Agents in the United States and Canada
FOR
SOCIÉTÉ ANONYME DES ÉTABLISSEMENTS
ROURE-BERTRAND FILS et JUSTIN DUPONT
GRASSE. FRANCE

Essential Oils · Aromatic Products · Perfume Bases

ROURE-DUPONT, INC.
366 Madison Avenue
New York, N. Y.
VANDERBILT 6-5830

ROURE-DUPONT, INC.
510 North Dearborn
Chicago, Illinois
SUPERIOR 3881

ROURE-DUPONT, INC.
5517 Sunset Boulevard
Hollywood, Calif.
HOLLYWOOD 3-5059

Bids and AWARDS

Detergent Award to Dups

Dups, Inc., Dallas, received the award on 125 drums of detergent with a low bid of 14.39 cents in a recent opening for miscellaneous supplies by the Federal Supply Service, Dallas. April 5, inv. 41475.

— ★ —

Superior Chem. Low Bid

Superior Chemical Products, Inc., Philadelphia, submitted the low bid of $1.025 on 5,000 gallons of textile moth insecticide in a recent opening for miscellaneous supplies by the Quartermaster, Philadelphia. April 21, inv. 727.

— ★ —

Low Swift Soap Bid

Swift & Co., Denver, submitted the low bid of 22.4 cents on soap in a recent opening for miscellaneous supplies by the Federal Supply Service, Denver. April 18, inv. 10321.

— ★ —

Low Airosol Bid

Airosol Co., Neodesha, Kans., submitted the low bid of 48.8 cents, on schedules 1 and 2 on aerosol insecticide bombs in a recent opening for miscellaneous supplies by the Federal Supply Service, Denver. April 18, inv. 9370.

— ★ —

Low Detergent Bids

Clarkson Laboratories, Philadelphia, and Tesco Chemicals, Inc., Atlanta, both submitted low bids on detergent in a recent opening for miscellaneous supplies by the Ordnance Corps, Raritan Arsenal, N.J. Clarkson bid 9.56 cents, item 1a, and 10.65 cents, item 1b. Tesco bid 14.5 cents, item 2, and 15.5 cents, item 3, April 15, inv. 301.

— ★ —

FSS Soap Award

New South Mfg. Co., Atlanta, won the award on soap with the low bid of 9.73 cents, item two in a recent opening for miscellaneous supplies by the Federal Supply Service, Atlanta. No award made for item one. May 19, inv. 27278.

— ★ —

Low Dishwash Comp. Bid

Economics Laboratories, Inc., St. Paul, Minn., submitted the low bid of 7.44 cents on dishwashing compound in a recent opening for miscellaneous supplies by the Federal Supply Service, New York. April 14, inv. 61274.

— ★ —

Low Standard Soap Bid

Standard Soap Co., Camden, N.J., submitted the low bid of 5.64 cents on laundry soap in a recent opening for miscellaneous supplies by the Federal Supply Service, New York. April 13, inv. 61266.

— ★ —

Soap Award to Tesco

Tesco Chemicals, Inc., Atlanta, received the award on 10,000 pounds of soap with the low bid of 10.86 cents in a recent opening for miscellaneous supplies by the Federal Supply Service, Atlanta. May 3, inv. 41660.

— ★ —

Low Sweeping Comp. Bid

Dustbane Products Company, Chicago, submitted the low bid of 2.96 cents on sweeping compound in a recent opening for miscellaneous supplies by the Federal Supply Service, New York. May 13, inv. 62062.

— ★ —

Low Pacific Coast Bid

Pacific Coast Borax Co., Los Angeles, submitted the low alternate bid of 8.25 cents on soap in a recent opening for miscellaneous supplies by the Federal Supply Service, New York. May 13, inv. 62299.

— ★ —

Herbicide Awards

In a recent opening for miscellaneous supplies by the Bureau of Reclamation, Denver, the awards on herbicides went to Octagon Process, Staten Island, N. Y., with the low bid of 67.2 cents, item one, and Pueblo Chemical Co., Pueblo, Colo., with the low bid of $14.75, item two. April 22, inv. 10562.

— ★ —

Low Swift Soap Bid

Swift & Co., Jersey City, N. J., submitted the low bid of 12.28 cents on soap in a recent opening for miscellaneous supplies by the Federal Supply Service, New York. June 3, inv. 62040.

— ★ —

Low Detergent Bid

Armour & Co., Chicago, submitted the low bid of $4.37 drum on synthetic detergent in a recent opening for miscellaneous supplies by the Federal Supply Service, Kansas City, Mo. May 31, inv. KC-39148.

— ★ —

Low Toilet Soap Bid

Baird & McGuire, Inc., Holbrook, Mass., submitted the low bid of 52 cents on toilet soap in a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D. C. May 10, inv. 60728.

— ★ —

Low Borax Powder Bid

G. H. Packwood Mfg. Co., St. Louis, submitted the low bid of 42.4 cents on borax powder in a recent opening for miscellaneous supplies by the Federal Supply Service, Atlanta. June 2, inv. 27313.

— ★ —

Washington Chem. Awards

Washington Chemical Sales Co., Washington, D. C., won two separate awards on stain removing compound with the low bids of $1.32 cwt, item one, and $1.26 container, item one in two recent openings for miscellaneous supplies by the Federal Supply Service, Washington, D. C. May 3, inv. S-346, May 24, inv. S-344.

— ★ —

Low Dishwash Comp. Bids

Washington Chemical Sales, Inc., Washington, D. C., submitted the low bids of 7.24 cents, item one, and 6.94 cents, item two, on dishwashing compound in a recent opening for miscellaneous supplies by the Federal Supply Service, Washington, D. C. May 20, inv. 61150.

Schimmel Para-Perfumes

in a wide range of attractive odors available with and without color.

Carefully adjusted to the evaporation rate of the blocks and crystals.

schimmel
& co., inc.
601 west 26th street
new york 1, n. y.

NEW Trade Marks

THE following trade marks were published in recent issues of the *Official Gazette* of the U. S. Patent Office in compliance with section 12(a) of the Trade Mark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the *Gazette*. See rules 20.1 to 20.5. As provided by section 31 of the Act, a fee of $25 must accompany notice of opposition.

Stanley — This for furniture cream, automobile polish, and floor wax. Filed Aug. 30, 1954 by Stanley Home Products, Inc., Westfield, Mass. Claims use since July 1931.

Crema-Balme—This for brushless shaving cream. Filed Apr. 12, 1954 by Buerger Brothers Supply Co., Denver. Claims use since on or about Aug. 1, 1932.

"Doc" Harry's K-9—This for dog cream shampoo. Filed Oct. 1, 1953 by "Doc" Harry's, Inc., Baltimore. Claims use since July 21, 1953.

Burn-Rite—This for oil burner chemical cleaner. Filed Oct. 28, 1953 by Orin A. Wolverton, doing business as Burn-Rite Chemical Service, Bay City, Mich. Claims use since Feb. 2, 1953.

Del-Mar—This for synthetic detergents for use as hand cleaners and laundry use. Filed Mar. 31, 1954 by East Coast Soap Corp., Brooklyn, N. Y. Claims use since Jan. 1, 1947.

Mac's MS plus—This for carburetor cleaner. Filed Apr. 15, 1954 by Mac's Super Gloss Co., to Mac's MS Plus, Los Angeles. Claims use since Oct. 26, 1953.

Durisol—This for metal cleanser and surface conditioner. Filed July 30, 1954 by American Chemical Paint Co., Ambler, Pa. Claims use since July 1, 1954.

Magnet — This for washing powder. Filed Aug. 5, 1954 by Swift & Co., Chicago. Claims use since in or about 1914.

embla-kleen—This for rug and upholstery cleaning compounds and household cleanser. Filed Aug. 27, 1954 by Salvatore J. Di Tucci, doing business as Embassy Rug and Upholstery Cleaning Co., Somerville, Mass. Claims use since Aug. 16, 1954.

Dabble — This for wash for nylon stockings. Filed Oct. 8, 1954 by Lucy Mae Terry, Tulare, Calif. Claims use since Aug. 17, 1954.

Com-Pat—This for bleaching powders for washing. Filed Sept. 14, 1954 by Martens Chemical Corp., Kingston, N. Y. Claims use since Aug. 7, 1954.

Super Quick—This for laundry starch. Filed Oct. 5, 1954 by Hubinger Co., Keokuk, Iowa. Claims use since Sept. 7, 1954.

Elm Farm—This for starch, ammonia, bleaches, and blueing. Filed Oct. 7, 1954 by Elm Farm Foods Co., Boston. Claims use since Sept. 1, 1931.

Top-O-Chlor—This for deodorant composition placed between wound dressing and outer bandages for deodorization of malodorous wounds. Filed Sept. 7, 1954 by Airkem, Inc., New York. Claims use since Aug. 10, 1954.

Glory—This for soap chips. Filed Aug. 7, 1954 by Swift & Co., Chicago. Claims use since in or about 1914.

Sofsan—This for powdered industrial hand cleaner. Filed Oct. 20, 1954 by West Disinfecting Co., Long Island City, N. Y. Claims use since Oct. 1, 1954.

Gaines—This for general household cleaning, waxing, and polishing composition. Filed Nov. 20, 1953 by James O. Gaines, doing business as Etowah Oil Co., Gadsden, Ala. Claims use since Sept. 1, 1953.

Griffin Microsheen—This for boot and shoe polish. Filed Oct. 1, 1954 by Griffin Mfg. Co., Brooklyn, N. Y. Claims use since Apr. 10, 1953; and since Apr. 4, 1894 as to "Griffin."

Tropic Air — This for spray chemical room deodorizer compound. Filed Feb. 26, 1954 by Approved Products, Inc., doing business as Windsor Chemical Laboratories, Philadelphia. Claims use since Feb. 1952.

10-39, 10-40—These for contact deodorants and sanitizers for application to surfaces of inanimate objects. Filed Oct. 27, 1954 by Airkem, Inc., New York. Claims use since June 9, 1953 and Oct. 6, 1954, respectively.

A C L—This for chlorine-bearing chemical compositions sold for use as sanitizing agents, deodorants, disinfectants, germicides, and bleaching agents. Filed Oct. 27, 1954 by Monsanto Chemical Co., St. Louis. Claims use since Apr. 1, 1954.

Ozo Lite—This for electric deodorizers. Filed May 10, 1952 by Pressteel Co., Berkeley, Calif. Claims use since Apr. 15, 1952.

SLS—This for ingredient of a toothpaste in the nature of an inhibitor of enzyme action. Filed Sept. 4, 1953 by Amm-I-Dent, Inc., Jersey City, N. J. Claims use since Sept. 2, 1953.

Foam Balm—This for pressurized after shave cream. Filed Dec. 2, 1953 by The Mennen Co., Morristown, N. J. Claims use since Sept. 24, 1953.

Tarex—This for liquid solvents for the removal of tar, grease and paint. Filed Sept. 22, 1953 by United Aniline Co., Boston. Claims use since January, 1933.

Tipton's Miracle Wash—This for detergent preparation used for cleaning and washing automobile upholstery and other fabrics. Filed Apr. 7, 1954 by Ralph M. Tipton, doing business as R. M. Tipton & Co., Brookfield, Ill. Claims use since Aug. 15, 1940.

Tricon—This for general purpose degreasing compound. Filed July 12, 1954 by New Process Chemical Co., San Francisco. Claims use since 1934.

Deed — This for household detergents. Filed Aug. 20, 1954 by Monsanto Chemical Co., St. Louis. Claims use since June 23, 1954.

Dandaway—This for dandruff treatment shampoo. Filed July 26, 1954 by May W. Levine, doing business as Paglo Laboratories, New York. Claims use since Jan. 12, 1953.

SIB—This for general purpose cleanser, disinfectant, deodorizer, and sterilizer. Filed Aug. 26, 1954 by Sinclair Mfg. Co., Toledo. Claims use since Sept. 22, 1933.

Colorhue—This for shampoos. Filed Aug. 31, 1954 by Nestle-Le Mur Co., New York. Claims use since Aug. 12, 1954.

Smudgee—This for cleaning preparation for walls, woodwork, and painted surfaces. Filed Oct. 13, 1954 by Drackett Co., Cincinnati. Claims use since Aug. 13, 1954.

Dainty Polish—This for liquid wax polish for floors and general purpose cleaning and polishing. Filed Nov. 7, 1952 by C. E. Derrington, doing busines as Derrington Products Co., Jackson, Miss. Claims use since in or about the year 1937.

Magic-ola—This for kit containing a powder preparation and polish for removing spots and polishing furniture. Filed Apr. 19, 1954 by Ed. W. Soffley, Butte, Mont. Claims use since Nov. 1, 1952.

VinyLifeLustre—This for floor polishing and cleaning preparation. Filed Oct. 12, 1954 by Vinylustre, Inc., Newark, N. J. Claims use since Jan. 1954.

U-Do—This for vegetable wax for polishing furniture. Filed Oct. 20, 1954 by General Plywood Corp., Louisville, Ky. Claims use since Sept. 11, 1954.

Irgaclarol—This for wetting and scouring agent. Filed Oct. 28, 1953 by Geigy Chemical Corp., New York. Claims use since Oct. 20, 1949.

IT—This for nylon rinse. Filed Nov. 23, 1953 by S. P. Trippy, doing business as Tripco Mfg. Co., Seattle. Claims use since on or about Nov. 2, 1953.

Poultricide—This for concentrated disinfectant, germicide, and poultry drinking water sanitizer. Filed Feb. 16, 1954 by King Research, Inc., Brooklyn, N. Y. Claims use since Aug. 10, 1953.

EC-54—This for liquid cleaning composition for industrial use. Filed Oct. 21, 1953 by Pennsylvania Salt Mfg. Co., Philadelphia. Claims use since May 15, 1952.

B-K — B-K—This for alkaline detergent for general purpose cleaning. Filed Nov. 16, 1953 by Pennsylvania Salt Mfg. Co., Philadelphia. Claims use since Apr. 10, 1952.

magikitch'n—This for all-purpose detergents. Filed Mar. 17, 1954 by Magikitch'n Equipment Corp., Quakertown, Pa. Claims use since Feb. 8, 1954.

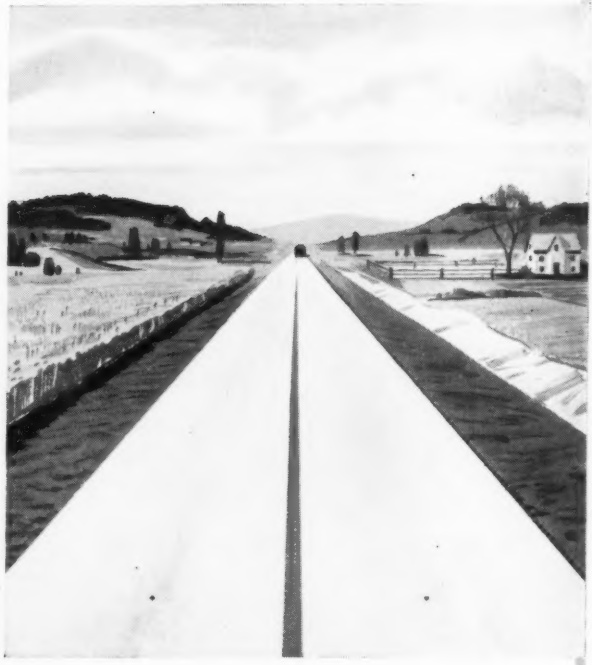
TM-14—This for liquid paint and varnish remover. Filed May 7, 1954 by Winfield Brooks Co., Woburn, Mass. Claims use since Feb. 26, 1954.

Solvay — This for detergents and washing compositions. Filed June 16, 1954 by Allied Chemical & Dye Corp., New York. Claims use since Mar. 3, 1953.

Rustripper — This for alkaline material for removing rust and paint. Filed July 26, 1954 by Oakite Products, Inc., New York. Claims use since July 2, 1954.

DOW

. . . almost out of sight already . . .



YOUR CAUSTIC ORDER'S ON ITS WAY FROM DOW

The steel rails could be in New York or New Mexico . . . the highway in Oregon or Alabama. Wherever, however . . . it's another caustic soda order on the way from Dow. The order is just hours old, but it's on its way.

Dow's vast and amazingly flexible distribution network is the answer. Three plants and six shipping terminals are tied together by a network of order communications.

Hundreds of caustic customers have learned how resourceful and helpful Dow Technical Service men can be. Whether it's an irritating wrinkle in your processing or a basic decision about the form of caustic you can use to best advantage—a call to Dow brings these trained consultants to you. Surprising savings in plant operations often develop from their visits.

Put your caustic problems "out of sight" for good. Simply make sure your next caustic order is with Dow. THE DOW CHEMICAL COMPANY, Dept. AL 390G, Midland, Michigan.

you can depend on DOW CHEMICALS

DOW

News

Gumpert Bon Ami VP

Louis James Gumpert has joined Bon Ami Co., New York, as vice-president in charge of sales and

Louis J. Gumpert

advertising, it was announced last month by Alvah E. Davison, president. Mr. Gumpert succeeds James A. Nelson, who is retiring for reasons of health. He plans an expanded advertising, merchandising and products development program for Bon Ami.

In January 1953 Mr. Gumpert retired as vice-president in charge of sales and a director of B. T. Babbitt, Inc., New York, after having been with the firm for 41 years. Having joined Babbitt as a retail salesman in 1911, he advanced later to district manager for metropolitan New York and Philadelphia, was appointed director of sales in the early thirties and became a member of the board in 1940.

Prior to his association with Babbitt, Mr. Gumpert had been with Kirkman & Son, Brooklyn, for two years.

—★—

Lever Surplus Declines

Lever Brothers Co., New York, suffered a $2.9 million decrease in surplus last year after a drop of $4.4 million in 1953, it was reported in the *Wall Street Journal* of June 21. Lever's holdings of cash and U. S. securities were down nearly $3 million to $8,050,085 and $33.6 million under the record holdings reported at the end of 1949, according to the *Wall Street Journal*. Merchandise and supplies, less reserves, dropped to $42.9 million from $44.2 million in 1953. Accounts payable and accrued liabilities of $21.7 million last Dec. 31 were up $3.4 million and represented the largest total in many years. Long term debt was reduced by $3 million last year to $46 million. This is $9 million less than the peak in 1951.

—★—

New Gillette Officers

Gillette Co., Boston, elected Malcolm C. Stewart as treasurer and Charles F. Woodard as general counsel, it was announced last month.

—★—

"Vervtex" Soap Tissues

Individual soap tissues, impregnated with a mild scented soap of good lathering properties, were introduced recently by Burlington Soap Co., Chicago. Trade-named "Vervtex", the tissues are said to keep soap consumption at a minimum.

Dispensers release one of the interfolded tissues at a time. Units are 5⅞ inches high and wide, and 2⅞ inches deep, and weigh 15 ounces. Each dispenser holds 325 soap tissues. Special strength adhesive is furnished for installation on glass, tile or other hard surfaces.

New dispenser for Vervtex soap tissues.

Jacobi to Alcolac

Edwin G. Jacobi has joined American Alcolac Corp., Baltimore, as general sales manager, it was an-

Edwin G. Jacobi

nounced last month by John E. Andre, executive vice-president. Prior to his recent appointment Mr. Jacobi was an officer and director of R. W. Greeff & Co., New York, which he had joined in 1943. He will make his headquarters in Alcolac's New York office and will be in charge of the firm's other sales offices in Chicago, Baltimore, and Montreal.

—★—

Economics, Moran Merge

The merger of Moran Co., Dallas, Texas, with Economics Laboratory of Texas, Inc., was announced last month by M. J. Osborn, chairman of the board of Economics Laboratory, Inc., St. Paul, Minn.

Moran will continue its operations as before in the manufacture of commercial liquid and powdered soaps. George W. Moran is general manager of the firm. Economics, maker of commercial and household dishwashing detergents, operates plants in Chicago, Lyndhurst, N. J., and Santa Clara, Calif., in addition to the Dallas operation.

Quality Makes the Difference

In your race for customer acceptance, make use of all help possible — where OLEIC ACIDS are needed, try A. Gross & Company's light-colored OLEIC ACIDS (RED OILS). Titres running as low as 1-3°C. are now available. In addition, low titre WHITE OLEINE is obtaining wide trade-acceptance.

RED OILS with as much as 1% higher free fatty acid content than competitive oils — RED OILS that are ester-free — these are the results of constant effort and application of Gross know-how.

Send for our new catalog "Fatty Acids In Modern Industry".

	White Oleine GROCO 6	Red Oil GROCO 4
Titre	2° — 6°C.	4° — 6°C.
Cloud Point	35° — 43°F.	42°F. max.
Color 5¼" Lovibond Red	1 max.	—
Color 5¼" Lovibond Yellow	10 max.	—
Color 1" Lovibond Red	—	2 max.
Color 1" Lovibond Yellow	—	15 max.
Color Gardner 1933	2 max.	—
Unsaponifiable	1.0% max	1.5% max.
Saponification Value	199 — 204	198 — 203
Acid Value	198 — 203	197 — 202
% F.F.A. as Oleic Acid	99.5 min.	99 min.
Iodine Value (WIJS)	95 max.	95 max.
Refractive Index 50° C. (Average)	1.4500	1.4500

A. GROSS & COMPANY

MANUFACTURERS SINCE 1837

295 MADISON AVENUE, NEW YORK 17, N. Y. • FACTORY: NEWARK, N. J. • DISTRIBUTORS IN PRINCIPAL CITIES

Annette Green in New Post

Annette Green, publicity director of Lentheric, Inc., New York, has been appointed women's

Annette Green

service director of the publicity department of Olin Mathieson Chemical Corp., New York, it was announced last month by Henry Hunter, publicity manager of the corporation. In addition to her new duties Miss Green will continue to handle the publicity activities of the Lentheric Division.

Miss Green was formerly beauty editor of National Educational Alliance, MacFadden Publications, Inc., New York, and was connected with Richard Hudnut, New York. Her offices are at the corporation headquarters.

—★—

Perlite Co. Makes Soap

Soaps and detergents for the dry cleaning industry are now being manufactured by the industrial division of Carolina Perlite Co., Salisbury, N. C. The firm's entry into this field was announced recently by H. B. Howard, president.

—★—

Glycerine Awards Open

The Glycerine Producers Association, New York, is now accepting nominations for the fourth annual glycerine research awards. Nominations must be made on official entry blanks and must be received by the association by Nov. 1.

Research bearing on the chemical, physical or physiological properties of glycerine, or of the properties of glycerine-derived or glycerine-containing materials is eligible. Work exhibiting originality in extending glycerine's usefulness in new applications will merit special consideration.

First award is $1,000 and an honor plaque; second $300 and honor certificate; third $200 and honor certificate.

—★—

Fred Neal Berry Dies

Fred Neal Berry, 70, retired chairman of Philippine Manufacturing Co., a subsidiary of Procter & Gamble Co., Cincinnati, died May 24 in Menlo Park, Calif.

—★—

Stokes to van Ameringen

Sydney N. Stokes has been named to the newly created post of assistant to the executive vice-president of van Ameringen-Haebler, Inc., New York. He assumes his new duties on Aug. 1, it was announced by Charles P. Walker, executive vice-president.

For the past twenty-one years Mr. Stokes had been associated with Merck & Co., Rahway, N. J., in various executive capacities in sales, sales promotion, distribution and administration. Most recently he held the post of regional sales manager in New York.

Mr. Stokes is vice-chairman of the Drug, Chemical and Allied Trades Section of the New York Board of Trade and a member of the board of governors of the Drug and Chemical Club of New York.

Sydney N. Stokes

Schachte Lever VP

Henry Schachte has been elected advertising vice-president of Lever Brothers Co., New York, ef-

Henry Schachte

fective June 27, it was announced by William H. Burkhart, president. At the same time it was announced that James A. Barnett, for the past three years consumer relations vice-president, becomes assistant to the president in addition to his previous duties.

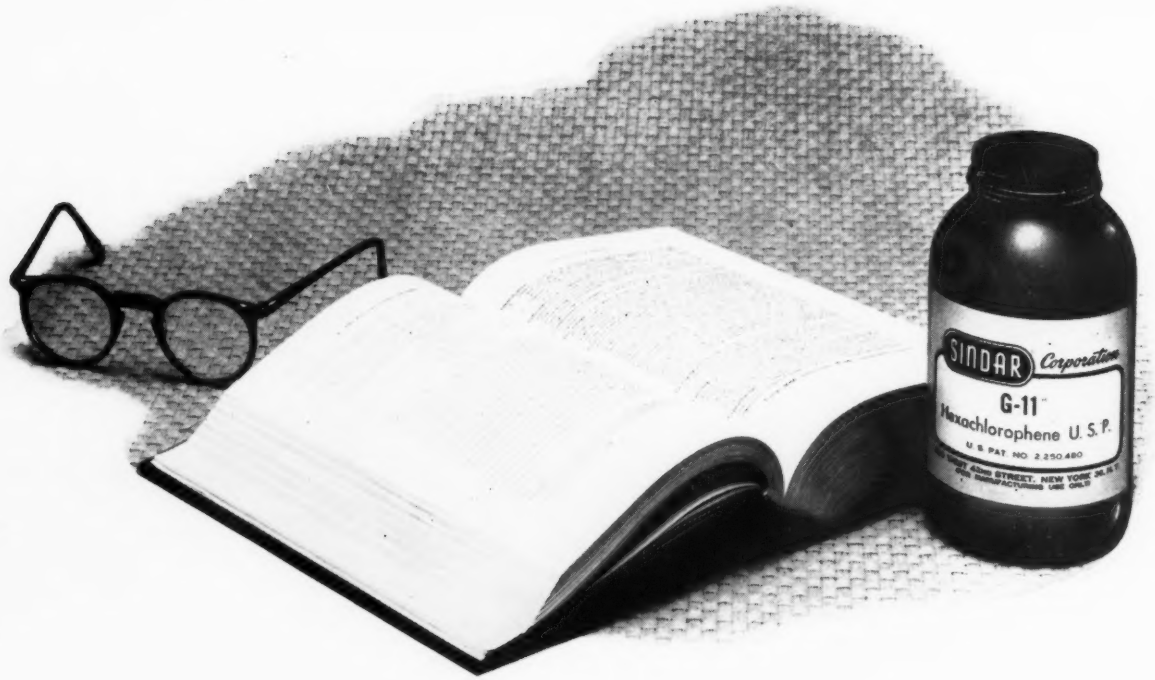
Before joining Lever, Mr. Schachte was senior vice-president of Bryan Houston, Inc., New York advertising agency. In his new position he will act in an advisory capacity to Lever's marketing divisions and to the general management on advertising and promotion. In addition he will carry the administrative responsibility for the operation of three divisions: promotion and advertising services; marketing research; and public relations, each of which will retain its present head.

Prior to going with Bryan Houston in 1953, Mr. Schachte served as director of advertising of Borden Co., New York, which he had joined in 1947. His previous associations included Young & Rubicam, Inc., New York, and General Electric Co.

—★—

New Coty HQ

New headquarters of Coty, Inc., and Coty International Corp., were officially opened late in June by Philip Cortney, Coty president.



HEXACHLOROPHENE—G-11®-and HEXACHLOROPHENE LIQUID SOAP

NOW U.S.P.

We are pleased to announce that hexachlorophene and hexachlorophene liquid soap have been included in the fifteenth revision of the Pharmacopoeia of the United States.

As the discoverer and producer of hexachlorophene, we welcome this further recognition by the medical profession and the privilege of joining the U.S.P. list of best-known and most important medical aids.

Hexachlorophene liquid soap is the only antiseptic soap recognized by the U.S.P.

G-11® is Sindar's trade-mark for hexachlorophene.

SINDAR® *Corporation*
Industrial Aromatics and Chemicals
330 West 42nd Street • New York 36, N. Y.
Branches: Philadelphia • Boston • Cincinnati • Detroit
Chicago • Atlanta • Seattle • Los Angeles • Toronto

A twelve story building located at 423 W. 55th St., New York, now houses Coty's entire American operation. Previously it was used only as a laboratory and production center.

— ★ —

Canadian TGA Elects

The Canadian Toilet Goods Manufacturers Association recently elected the following new officers: president, E. A. Williams, vice-president and general manager of Ponds Extract Co. of Canada, subsidiary of Ponds in New York. Andre Ligne, Coty Canada, Montreal; Reg Fairbanks, Fairbanks Soap Co., Toronto; and Gordon Savage, J. B. Williams Co., Canada, Montreal; were named first, second and third vice-presidents, respectively.

— ★ —

Hooker Shifts Executives

Hooker Electrochemical Co., Niagara Falls, N. Y., announced last month the election of R. Lindley Murray as chairman of the board. Mr. Murray succeeds Edwin R. Bartlett who resigned as board chairman to become chairman of the company's newly created finance committee. The new president of the company is Bjarne Klaussen, former executive vice-president.

Both Mr. Murray and Mr. Klaussen have agreed to remain in Hooker's active service for a period of two years beyond their normal retiring dates in 1957. Mr. Murray and Mr. Klaussen have been president and executive vice-president, respectively, since 1951.

The new finance committee members, in addition to Mr. Bartlett, are: Mr. Murray, and R. Wolcott Hooker, J. Herbert Babcock and John F. Snyder, all vice-presidents and directors, and Clinton S. Lutkins, who is a director.

Mr. Murray joined Hooker in 1916 as a research chemical engineer. He rose through various positions including manager of research, chief engineer, director of development, vice - president in charge of development, to executive vice-president and president.

R. Lindley Murray

Bjarne Klaussen

New office and research laboratories building (top) opened recently by Cowles Chemical Co., Cleveland, adjoining its plant in Skaneateles, N.Y. Three Cowles executives looking at new building are: l. to r.: N. E. Woonton, plant manager; R. F. Huntley, president, and C. C. Bassett, vice-president and director of sales. Lower photograph taken during open house ceremonies shows, l. to r.: G. T. McCray, Eaton Chemical & Dyestuff Co., Detroit; Ray Nowak, Far Best Corp., Chicago; C. C. Bassett, Cowles; Carlton Mertz, L. Carlton Mertz Co., Chicago; William Block, Blockson Chemical Co., Joliet, Ill.

— ★ —

Zilch to Emery Research

Karl T. Zilch has joined the research staff of Emery Industries, Inc., Cincinnati, it was announced last month by R. G. Kadesch, director of research. Dr. Zilch will work in the fatty acids and esters laboratory under direction of V. J. Muckerheide. He was previously associated with the oil and protein division of the Northern Utilization Research Branch of the U. S. Department of Agriculture, Peoria, Ill.

Dependable Source for Chemical Raw Materials

Eugene T. Eldredge (left), treasurer, Hilex Co., and President Asa A. Eldredge agree that it takes quality ingredients — like Wyandotte Caustic — to make a quality bleach.

"Quality chemical ingredients helped us build volume sales"

— Asa A. Eldredge, president, Hilex Co., St. Paul, Minn.

"Our Hilex Household Bleach is known to millions as strictly a high-quality product . . . and that takes the best of ingredients," says Asa A. Eldredge, president, Hilex Co., St. Paul, Minn.

"We maintain high standards in everything we buy. We insist on Caustic that is consistently very low in copper and iron content. This is a fundamental with us. We test every tank car of Caustic to see that it meets our stringent requirements.

"We have been buying Wyandotte Caustic for more than 10 years. We have found that Wyandotte products not only meet our rigid specifications for quality, but that Wyandotte gives us excellent service as well.

"Personally, we feel that when we buy this way, and know the quality of our ingredients, our own selling job becomes much easier. The Hilex Company's growth and sales record are proof of this."

If you use chemical raw materials in your business, you will find Wyandotte a good source of supply. Wyandotte quality is uniform from shipment to shipment; deliveries are prompt, and our continuing research on basic raw materials has been found most helpful by many firms like yours. Why not discuss your requirements with a Wyandotte representative? *Wyandotte Chemicals Corp., Wyandotte, Mich. Offices in principal cities.*

Wyandotte
CHEMICALS

HEADQUARTERS FOR ALKALIES

Soda Ash • Caustic Soda • Bicarbonate of Soda • Chlorine
Muriatic Acid • Calcium Carbonate • Calcium Chloride
Glycols • Chlorinated Solvents • Synthetic Detergents • Agricultural Insecticides • Other Organic and Inorganic Chemicals

Joins Roure-Dupont

The appointment of Gerald G. Bessinger to the sales staff of Roure-Dupont, Inc., New York,

Gerald G. Bessinger

was announced recently by Jacques d'Aigremont, president. Mr. Bessinger will be in charge of Canadian operations and handle special assignments. In this capacity he will take over the duties of Alvin E. Smith, manager of the Canadian branch, who retired recently after 30 years with Roure-Dupont.

Mr. Bessinger previously had been with Felton Chemical Co., Brooklyn, for two years and for the past two years has been with A. Maschmeijer, Jr., Div., New York. He received a B.S. degree in chemistry from Columbia University.

A luncheon was given Mr. Smith on his retirement May 19 at the Waldorf Astoria Hotel, New York. The luncheon was tendered by Mr. d'Aigremont and Louis Amic, head of Roure-Bertrand Fils et Justin Dupont of Paris, who was in the United States for a short visit.

—★—

Russell of P Q Dies

Edwin A. Russell, 66, vice-president and director of Philadelphia Quartz Co., Philadelphia, died June 27 at the Burlington County Hospital, Mt. Holly, N. J., following a heart attack.

Mr. Russell joined Philadelphia Quartz in 1918 and became sales manager in 1928, director in 1944, and vice-president in charge of sales in 1945. He was a life member of the Religious Society of Friends. Surviving are his wife and his two daughters and three sons.

—★—

New CP Buying Guide

The 1955 edition of "Handy Soap and Synthetic Detergent Buying Guide" has just been published by Colgate-Palmolive Co., Jersey City, N. J. Intended for industrial and institutional users of cleaning products, the illustrated pocket-size booklet lists products and information on uses, performance and packaging. This year's guide includes "'Florient" pressure packed air deodorant, "Kan-Kil" pressure packed insecticide, and a new low foam detergent for quick-service laundries. Copies of the guide may be obtained from Colgate's Industrial Department, 105 Hudson St., Jersey City 2, N. J.

—★—

Morehouse-Cowles Course

Morehouse-Cowles, Inc., Los Angeles, national distributor for Cowles Dissolver Co., Cayuga, N. Y., held a two day course of instruction at the Cayuga plant for field representatives east of the Mississippi and Eastern Canada. Technical classes, laboratory demonstrations, and full scale production equipment runs were set up. Nearly all products currently being processed by Cowles Dissolvers, methods of handling, accessory equipment requirements, special engineering features, controls, horse power problems, etc. were covered.

Hexachlorophene in U.S.P.

Hexachlorophene and hexachlorophene liquid soap are listed in the 15th revision of the *United States Pharmacopoeia*, it was announced recently by Sindar Corp., New York, producer of "'G-11" brand of hexachlorophene.

—★—

New West End Quarry

West End Chemical Co., Oakland, Calif., recently announced acquisition of a new lime rock deposit in the Argus Range, Inyo County, Calif., north of their present plant location at Westend. Transfer of present quarry operations to the new site is anticipated in the immediate future. The company is considering installation of a rotary lime kiln using natural gas as fuel, capable of processing 170 tons of lime a day. The lime will be of high quality, the firm says, who expects to market it as pebble and hydrated lime. At the same time West End announced completion of its new sodium sulfate unit early in July.

—★—

Coupon Clearing House

National Coupon Clearing House, Inc., was established last month by Robert F. Miller & Associates, Inc., Washington, D. C. organization and management counsel. Intended as a "laboratory" for development of better procedures in coupon promotions, it offers facilities to manufacturers for the cooperative handling of coupon problems.

Among those present for recent luncheon in honor of Alvin E. Smith, retiring manager of the Canadian branch of Roure-Dupont, were, left to right: Andre Fromentin, Miss Adele Wisner, Jacques d'Aigremont, president, Alvin E. Smith, Louis Amic, Mrs. Marion Tabor, and standing, Russell Ricketts, Ed Galvin and Clarence Long.

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IN CANADA: Standard Chemical Limited and its Commercial Chemicals Division

Wyandotte Advances Two

Michigan Alkali Division of Wyandotte Chemicals Corp., Wyandotte, Mich., recently appointed S. B. Scott as director of sales, and Paul M. Bigley as product manager for alkalies, chlorine, and carbon dioxide.

The new director of sales joined the firm's New York office in 1942 and was named manager of that office eight years ago. In his new position Mr. Scott is responsible for all sales and sales activities of the Michigan Alkali Division. He will cooperate with other divisions of the company on all matters pertaining to sales of Wyandotte's products.

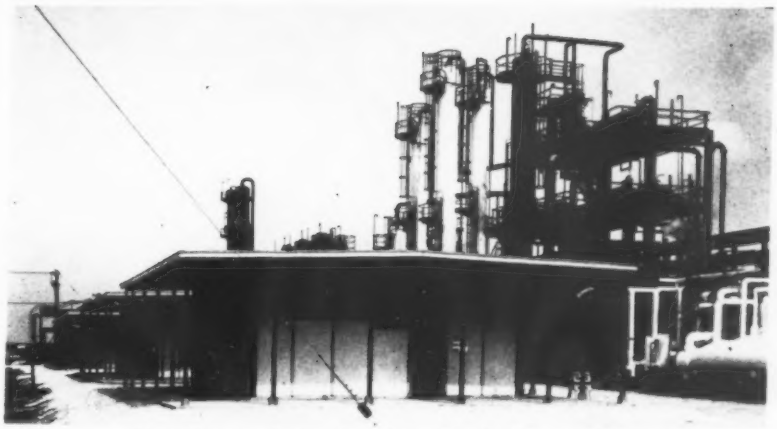
Mr. Bigley has been with Wyandotte for 37 years, 12 of these as a sales executive. Except for 10 months ending in February, 1952, when he was an industry consultant to the Office of Price Stabilization in Washington, D. C., Mr. Bigley's service at Wyandotte has been continuous.

In his new position he is in charge of sales, plans and programs related to chlorine and caustic soda in addition to soda ash, bicarbonate of soda and dry ice, products for which he has been responsible during the past few years.

Mr. Bigley will be assisted by John Hodge, with Wyandotte since 1952, and Paul Niefert, a member of the firm's order and scheduling department for nine years.

S. B. Scott

Paul M. Bigley



New Dow synthetic glycerine plant in Velasco, Tex.

In Continental Oil Post

William C. Calhoun has been appointed administrative assistant to the manager of the petrochemicals department of Continental Oil Co., Houston, Texas, it was announced late last month by John E. Kircher, manager. Mr. Calhoun makes his headquarters in Houston.

—★—

Dow Glycerine Plant

The second unit in the world to make glycerine by a synthetic process will be opened by Dow Chemical Co., Midland, Mich., late this summer. The new plant, located at Velasco, Texas, has a rated capacity of 36,000,000 pounds a year. Construction started about a year ago. Donald Williams, vice-president and director of sales, expressed his confidence in a continually expanding market for glycerine, and said the increased availability of the synthetic material, made possible by Dow's production, would tend to have a stabilizing effect on the market. Dow will ship its synthetic glycerine to users in aluminum tank cars, resin-lined drums, and tank trucks.

—★—

ADM Names Schroeder

Ernest H. Schroeder has been appointed regional sales manager by Archer-Daniels-Midland Co., Minneapolis, it was announced recently by James W. Moore, vice-president in charge of sales. Mr. Schroeder now is in charge of the sale of all ADM products, excluding family flour, grain, and foundry products in the territories served by the firm's offices and agents located at Cincinnati, Indianapolis, and Louisville. Mr. Schroeder joined the resin division of U. S. Industrial Chemicals, Inc., New York, in 1947 and continued with ADM when it purchased the USI resin division in 1954.

—★—

In New Continental Post

Chester W. MacArthur has been appointed manager of the Washington, D.C., office of Continental Can Co., New York, it was announced recently by P. Wojtul, vice-president, sales. Mr. MacArthur was formerly a product sales manager in Continental's metal division. In his new post he directs the firm's liaison activities with government agencies. He succeeds W. L. Rowlands, who died in January of this year.

Dawn of a Great Day in Perfumery–

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VERSALIDE is a new and uniquely different type of musk—the product of more than two years of extensive research and testing. Its development by Givaudan opens up fresh fields of opportunity for creative perfumery.

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**Patent Pending*

World Fat Balance Better

A better balance in the world supply of all fats and oils is seen by J. C. A. Faure of Unilever, who spoke at the recent congress of the International Association of Seed Crushers in Baden Baden, Germany. The improvement is largely due to the release of U. S. surplus liquid oils, which has once more created a world market instead of two distinct watertight markets, one a dollar market, the other soft currency. The free movement of oils and fats on a world wide basis will act as a price stabilizer, Mr. Faure stated. He forecast that world production of fats and oils would rise in 1955 to a total of about 25,970,000 metric tons from about 25,600,000 metric tons in 1954. World exports of oils and fats in 1955 are estimated at 6,400,000 metric tons, only a 100,000 tons more than in 1954. World import requirements are placed at 6,180,000 tons, which leaves a theoretical surplus of 220,000 tons. As there is usually a gap in actual world exports of about 200,000 tons, export supplies are likely to balance, Mr. Faure pointed out.

By far the largest exporter will be the United States with an estimated total of 1,630,000 tons, not much below the figure for last year. The greater part of the Commodity Credit Corporation's cottonseed oil will be shipped this year. Last year U. S. cottonseed oil exports amounted to 260,000 tons whereas the estimated figure for this year is 275,000 tons. Exports of tallow and grease from the U. S. are expected to reach 535,000 tons in 1955.

—★—

Becco Advances Hopkins

Appointment of John R. Hopkins as assistant manager of the southern district sales office of Becco Chemical Division, Buffalo, N. Y., was announced last month by John Shea, vice-president in charge of sales. Mr. Hopkins works directly under D. S. Quern, manager of Becco's district sales office in Charlotte, N. C.

Mr. Hopkins joined the research staff of Becco in 1935 and was concerned with hydrogen peroxide bleaching of textiles and related wet processing. In 1946 he

John R. Hopkins

was transferred to Charlotte where he provided customer service to mills engaged in textile and pulp bleaching operations in his capacity as technical representative. Mr. Hopkins' activities in this field will continue unchanged.

—★—

Deinzer in Europe

Herman Deinzer, president of New York Aromatics Corp., High Bridge, N. J., left last month for a two months' trip to Europe. Purpose of Mr. Deinzer's stay is both business and pleasure. United States sales of the products of J. Mero & Boyveau, Grasse, France will be one of the matters which he will negotiate. Mr. Deinzer is accompanied by his daughter Maria.

—★—

Solvay Advances Fisher

Appointment of Solon D. Fisher as technical assistant to the manager of the ammonium and potassium section, Solvay Process Division, Allied Chemical & Dye Corp., New York, was announced last month by L. B. Gordon vice-president. Mr. Fisher assumed his new duties July 1 and is located at the executive office in New York City. He went with Solvay in 1948 as salesman in the St. Louis branch. He holds a degree in chemical engineering from Kansas State College.

Honors "All" Advertising

Monsanto Chemical Co., St. Louis, and its advertising agency, Needham, Louis & Brorby, were honored for the planning and execution of their promotion of "All" detergent during the recent annual meeting of the Bureau of Advertising of the American Newspaper Publishers Association. Roy L. Brandenburger, vice-president and general manager of Monsanto's merchandising division, and Melvin Brorby, senior vice-president of the agency, were presented with inscribed bronze desk ornaments by Harold S. Barnes, director of the Bureau.

In accepting the award, Mr. Brandenburger said that as a result of the newspaper advertising "the number of people familiar with the name 'All' and disposed to buy 'All' has doubled each year for the last two years. Further, we have found that the number of people who know 'All' and know it favorably has increased 10-fold over the last five years." "All's" share of the market for heavy-duty soaps and detergents, he added, "has vaulted from 10th place to fourth place" nationally in the last two years, and in some markets has achieved second or third position.

—★—

Zotox Names Leyla Sefa

Appointment of Leyla Sefa as advertising manager of Zotox Pharmacal Co., Stamford, Conn., was announced last month by Frederick G. Mayer, president. Miss Sefa, a native of Turkey, graduated from Skidmore College in 1937 and joined Montgomery Ward as a copywriter. Zotox makes medicinal soaps and other proprietaries.

—★—

Anti-Static Dry Cleaning

A new dry-cleaning process developed by Davies-Young Soap Co., Dayton, utilizes anti-static agents and results in lint free cleaning. The process, known as "Clean Charge" is currently being used in new automatic equipment at the plant of New City Cleaners, Bakersfield, Calif.

Transparent Soaps
(*From Page 46*)

rect balance of materials can make all the difference between a good transparent soap and a bad—and the worst of it is that the final condition of the soap is frequently not detectable until several weeks have elapsed.

Perfuming

A word or two about perfume. Odorants that darken in ordinary milled soap naturally tend to spoil the delicate tint of transparent soaps—more particularly so because of the long maturation period coupled with the greater exposure to light. The earlier soaps of this kind were perfumed with clove and cassia oils, in addition to caraway, sandalwood, rose and lavender; and the clove eugenols were doubtless one of the major causes of the progressive deep discoloration of these soaps.

Other perfumes are apt to have an adverse effect on transparency, while others probably favor this phenomenon.

The heavily rosined soaps have a natural background odor of their own, which is still frequently blended with cassia and cinnamic aldehyde, despite their discoloring propensities. Other perfume materials used include geraniol, phenylethyl alcohol, palmarosa, safrole (traces), citronella, rosemary, nutmeg, benzyl acetate, amyl cinnamic aldehyde, terpineol, bois de rose, linalyl acetate, phenyl methyl carbinyl acetate, caraway, dill etc. In the U. K. a somewhat spicy odor is still preferred.

By way of conclusion, I would like to make a brief mention of the possibility of producing transparent soaps by purely physical means. Procter & Gamble Co., whose pioneer work on the crystal phases of soap is well known, own several patents covering the results of various researches into different applications of this work. Among these applications is the development of translucency in milled soaps, with particular reference to the relationship between water, salt and soap content.[19] The "salts" referred to include sodium chloride and carbonate, silicates and phosphates. While this particular patent deals specifically with milled soaps of only moderate translucency, it appears to confirm the general view that mechanical treatment and the incorporation of electrolytes may eventually be utilized conjointly, with no other means but adequate temperature control, to produce transparent soaps of satisfactory appearance and at lower cost.

The claims of the Italian firm of soap machinery engineers, Mecchaniche Moderne, that transparent soaps may be produced by mere regulation of its continuous solidification-cooling plant may also be noted in passing. We may likewise recall the claim of Tjutjunnikov and co-workers (*loc.cit.*) that a hard, milled transparent soap may be obtained by repeated milling and plodding—about five or six times in succession—provided that the temperature of the soap during these operations does not exceed the upper limit of the stability of the vitreous phase. They added that factors favoring the production of such soaps are chilling of the rolls, minimum clearance between the rolls, and the use of a specially made, slow-running plodder with an annular orifice water-cooled both internally and externally. They claimed to have produced perfectly satisfactory transparent soaps based on palmitic acid, coconut oil, castor oil and rosin, by this means. Their published work, incidentally, recalls the prior claims of a somewhat similar type made by the German firm, Henkel, as long ago as 1933.[20]

Finally, there is always the possibility of a combined soap and synthetic detergent cake—transparent, as in the case of several attractive jellies of this type—to be considered. Transparent soaps containing special ingredients, such as selected non-opacifying antiseptics and deodorants, could also be made, and might well prove attractive from the sales promotion point of view as serving to identify the particular brand of soap with its specialized function.★★

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—★—

New Consultants' List

The 15th edition of "Consulting Services" has just been published by the Association of Consulting Chemists and Chemical Engineers. The 1955 guide appears in a format, six by nine inches, 144 pages, paper covered, price $1.00. As in previous editions each member's qualifications and activities are described. An alphabetical and a geographic cross index are appended. The book is available from the association at 50 East 41st Street, New York 17. It should be requested on letterhead and remittance be enclosed.

—★—

On Conference Board

Neil McElroy, president of Procter & Gamble Co., Cincinnati, is one of the vice-chairmen elected by the National Industrial Conference Board at its recent 39th annual meeting. Stewart P. Coleman, Standard Oil Co., (New Jersey), was also named vice-chairman and chairman of the trustees.

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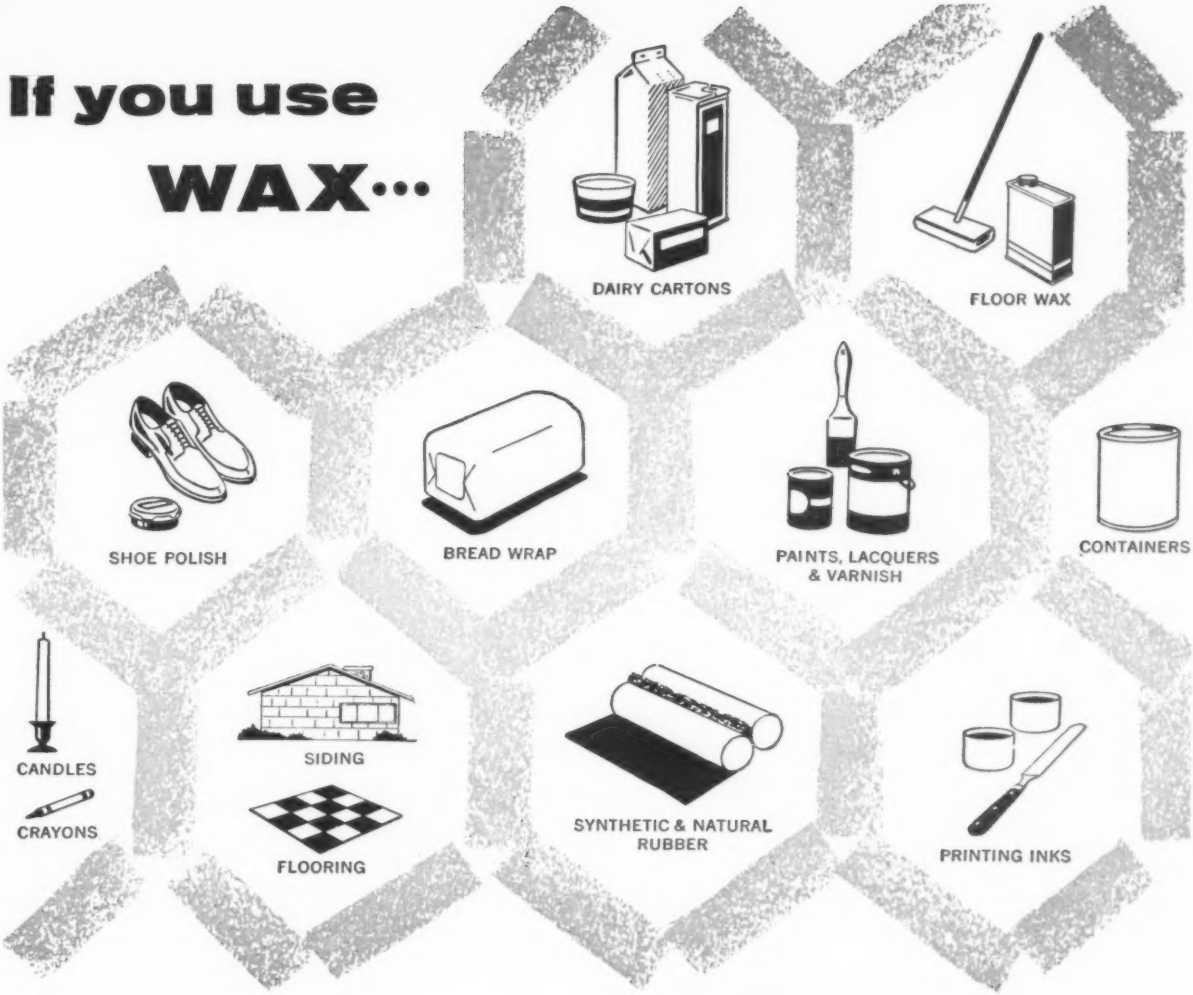

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4. Rubber Manufacture	Thermo Plasticizing Agent	Increases Dispersibility of Filler
5. Fuel Oil	Keeps Sludge in Suspension	Prevents Segregation of Moisture
6. Printing Ink Manufacture	Aids dispersion of pigment	Reduces Viscosity of Ink
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8. Additives for Lube Oil	Acts as Detergent	Inhibits Bearing Corrosion
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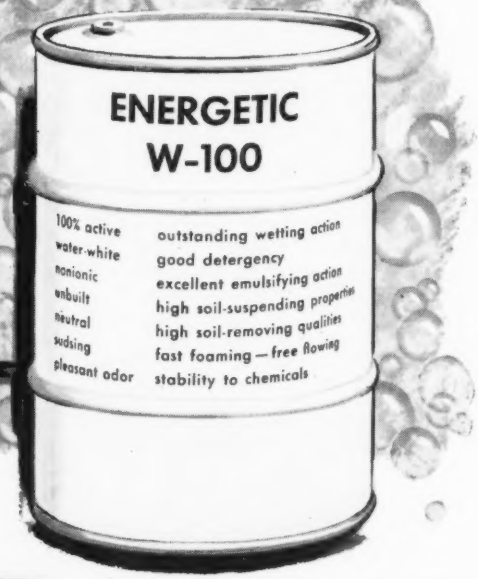

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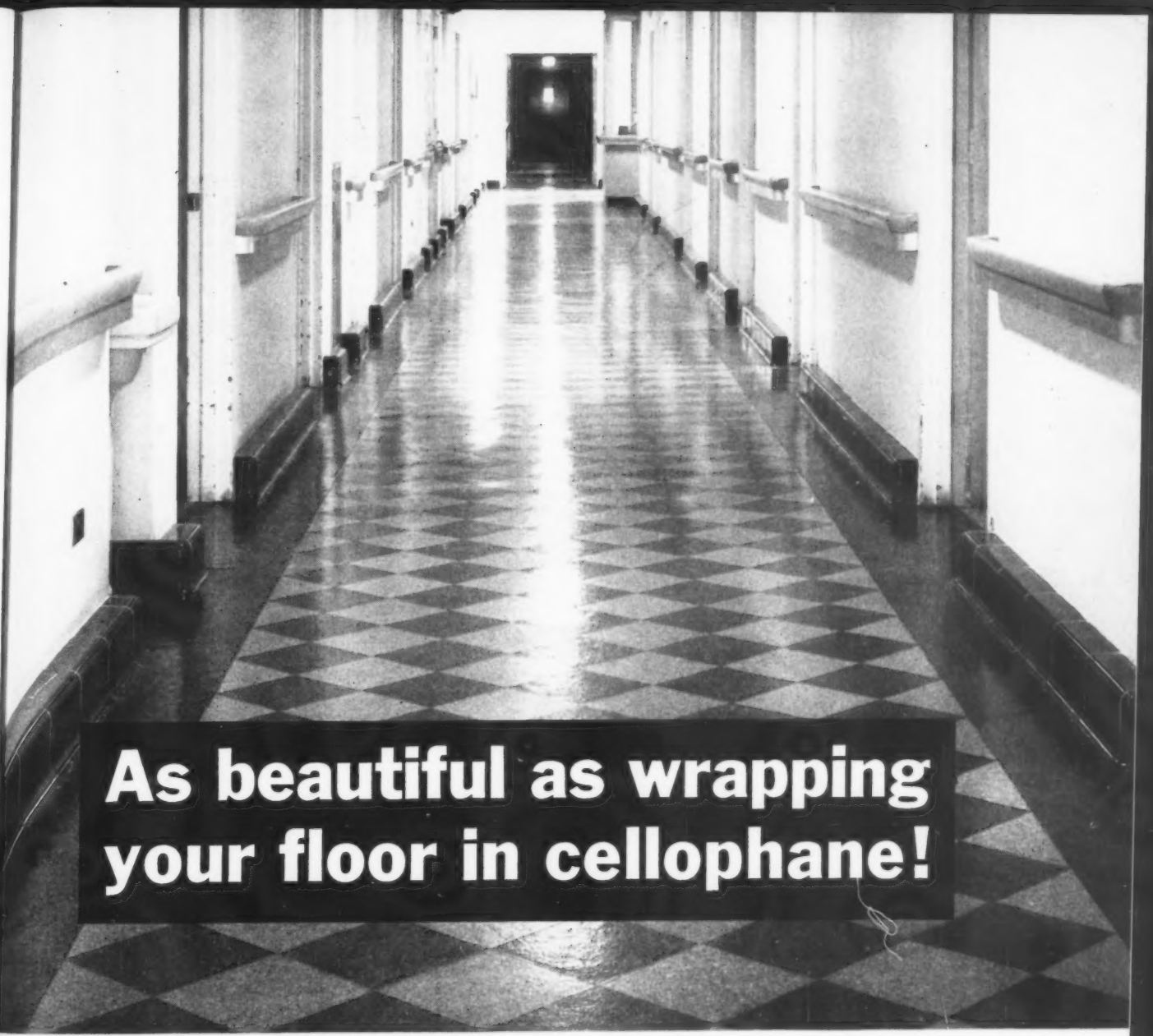

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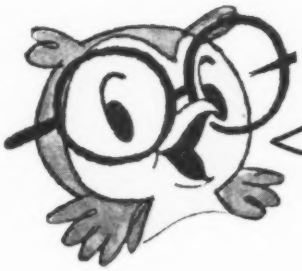

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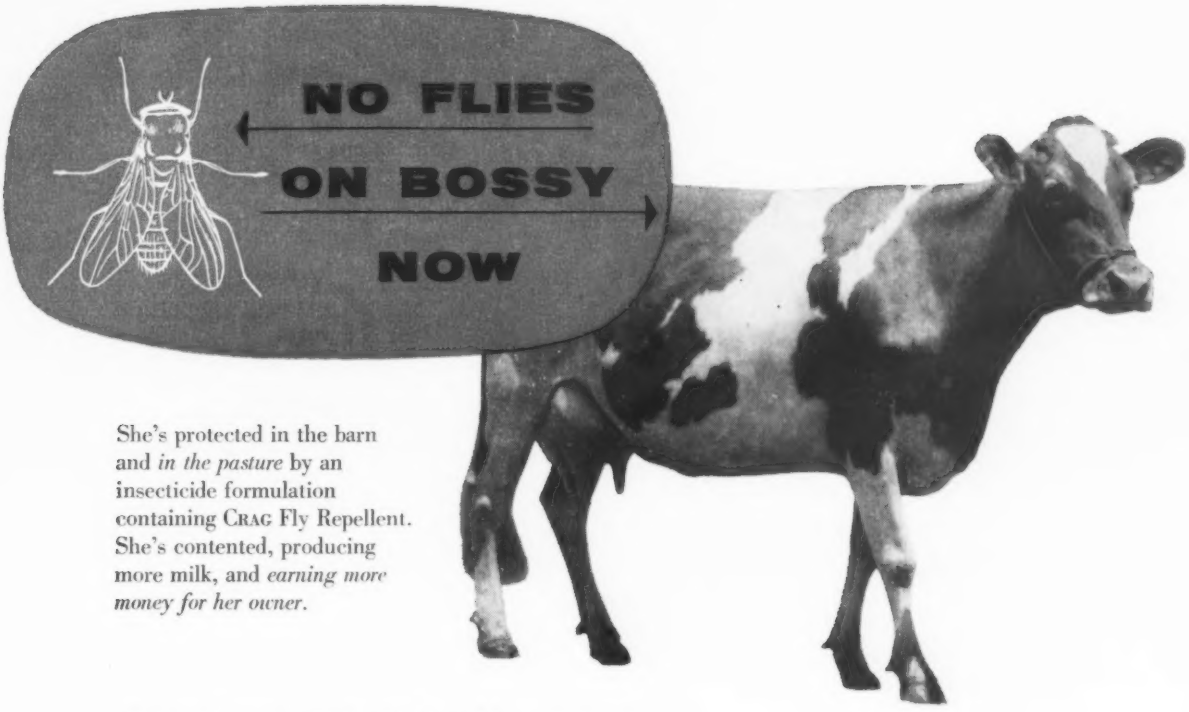

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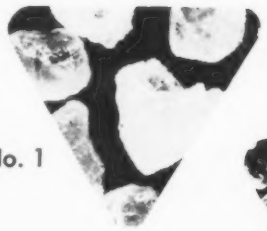

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A group of polishes, waxes and other specialties that contain silicones. Photograph was made by Wiebolt Stores, Inc., Chicago.

Silicone Furniture Polishes

A LOOK at sales growth shows that in the seven to eight years since silicone polishes have been generally commercially available, their sales volume has grown steadily. Last year over 60% of the total dollar volume of furniture polish sales was made up of silicone polish. Sales of silicone polish increased 20 percent in 1954, while the total market increased only about seven percent. Silicones have brought about completely new and different concepts of polish formulation, including solvent wax dispersions and various types of emulsions containing silicone.

What Silicones Are

SILICONES are a new class of chemicals. They are based upon sand, natural gas, salt, and water. Their resemblance to sand or silica can be observed by comparing Figures 1 and 2. The silicon and oxygen backbone in sand, Figure 1, is also present in the silicone, Figure 2, in which organic methyl groups have been attached to the silicone. This is the dimethyl silicone generally used in polishes. They combine much of the outstanding stability of inorganic materials on the one hand with great versatility of organic compounds on the other. In their resistance to heat and cold and ageless qualities they resemble the

By Thomas H. Reilly and Donald V. Brown*
Silicone Products Department
General Electric Co.
Waterford, N. Y.

*Paper presented before 41st midyear meeting, Chicago, May 16, 1955.

SiO_2 - SAND

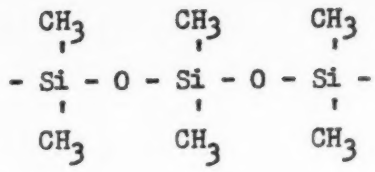
FIGURE I

sand from which they are derived. In their many forms including rubber, fluids, greases, resins and emulsions, they resemble the numberless array of chemicals which are derived from natural gas and coal. Also, much of the versatility of silicones is due to the fact that silicone is what is called a transition element and can combine with many other elements in much the same way as carbon. Because the silicones are synthetic, hybrid chemicals, they are different from any other materials on earth in their unusual film properties such as easy slip, release from sticking and water repellency.

How are silicones made? A simplified description of the process is this: Sand is reduced to elemental silicon in carbon electrode furnaces. In a direct reaction developed by General Electric this elemental silicon is combined with chlorine and methyl or phenyl groups. A mixture of these intermediate products, called chlorosilanes, is then separated by distillation in much the same way as crude oil is refined. The refined chlorosilanes become silicones by hydrolysis which is simply a reaction with water. Further processing including polymerization, compounding, and emulsification produces the large family of silicones numbering upwards of 300 products today.

Silicone Benefits

THERE are a number of benefits that might be listed for using silicone fluids in furniture polish but we can summarize these into four principal categories as follows: (1) *Quick and easy wipe-on-wipe-off polishing*: This property is made possible by the fact that the surface tension of the silicones is extremely low compared with other materials. Silicone fluids such as the General Electric SF-96 series exhibit surface tension on the order of 20 dynes per centimeter compared with an average of 35 dynes per centimeter for petroleum oils. This enables silicones to wet and spread easily and require only about 60 percent as much effort to spread and rub out as do mineral oils—hence, the ease of wipe-on wipe-off polishing.



DIMETHYLSILICONE POLYMER

FIGURE II

(2) *Brilliant shine and improved depth of color*: The excellent appearance of silicone wax surfaces is due to the extreme smoothness of the finish brought about through lubricity of the silicone for the wax crystals. In fact, the silicones allow hand polishing to equal quality heretofore attainable only through power buffing. The silicone fluids are incompatible with the waxes used in polishes and, therefore, do not act as softeners or plasticizers. Instead the silicone acts as a lubricant for the randomly deposited wax crystallites and permits them to be laid down easily and oriented into a continuous film without hard rubbing. Use of very hard waxes such as carnauba or various types of hard microcrystalline and oxidized microcrystalline waxes is possible without increasing polishing difficulty.
(3) *Slick dry surface after polishing*: Instead of the oily, smeary finish left by many old type polishes,

Figure 3: Built-up fisheye, or craters. Spraying on more coats of lacquer only deepens and widens crater.

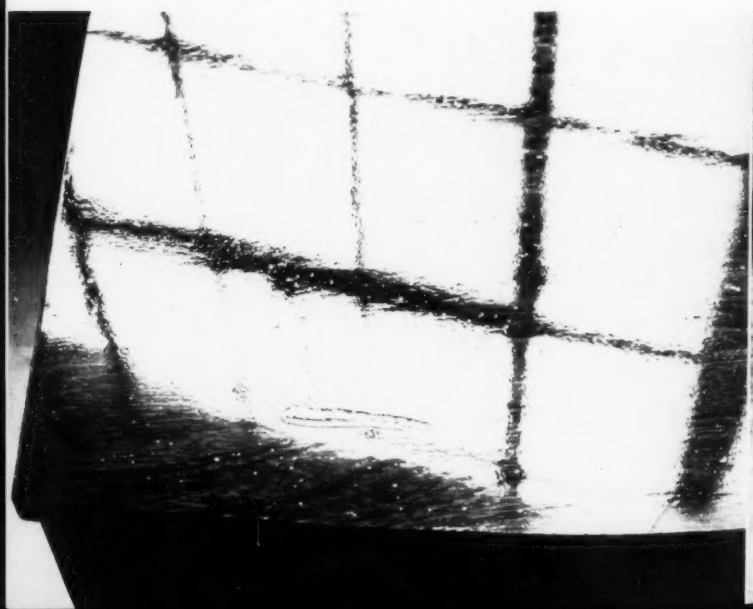


Figure 4: Furniture refinishing procedure. Table is masked, ready for stripping and refinishing.

silicone based products leave a smooth dry surface which tends to keep dirt and dust from adhering to the polished surface and hence allows easy dusting.

(4) *Water repellency and improved resistance to staining*: Silicones are among the most durable of all water repellent materials. Drops of water on a silicone film give a contact angle considerably greater than 90 degrees. This water repellency also permits quick and easy wipe up of various types of liquid spillages.

Many Viscosities Available

GENERAL Electric Co. silicone fluids are available in a wide variety of viscosities ranging from a few centistokes to several million centistokes. In general the lower viscosity fluids give easier rub-out when used in polishes, while the higher viscosities give a somewhat better gloss. Since in most polishes both of these properties are desired, some sort of compromise of these two objectives is necessary. In most silicone furniture polish a fluid of 300 centistokes or less is used.

Silicones are based on modern scientific research and offer all the benefits of uniformity and quality associated with carefully controlled synthetic chemicals.

Silicone Formulations

THE art of furniture polish formulation has been revolutionized by the introduction of the silicones. Today's popular solvent dispersion type polish which includes silicone fluid and wax was made possible by the lubricity imparted to the wax by the silicones. An example follows:

Solvent Type Furniture Polish

	Parts
SF-96-300 Silicone Fluid	2.5
Carnauba Wax	1.5
Cardis 319 Wax	1.5
Mineral Spirits	95.0
	100.0

For those who desire a cream type product, the silicones together with the many top-quality natural and synthetic waxes make ideal combinations.

Cream Type Furniture Polish

	Parts
SF-96-300 Silicone Fluid	4.0
Carnauba Wax	1.0
Cardis 319 Wax	1.5
Paraffin Wax	2.5
Mineral Spirits	20.0
Span 60	1.5
Tween 60	1.5
Sodium CMC	0.3
Water	67.7
	100.0

Emulsifying agents such as those manufactured by Antara Chemicals, a sales division of General Aniline & Film Corp., New York; Armour & Co., Chicago; Atlas Powder Co., Wilmington, Del., and Rohm and Haas Co., Philadelphia, and others are also suitable for use with silicone fluids.

Part of the buying public favors paste wax for furniture polishing. Addition of silicones to paste wax greatly enhances ease of application and buffing. It is our belief that a very promising market awaits specialty manufacturers who will market a siliconized paste wax with its excellent protection and brilliance of shine. The formulation below has given very good performance in our tests.

Paste Type Furniture Polish

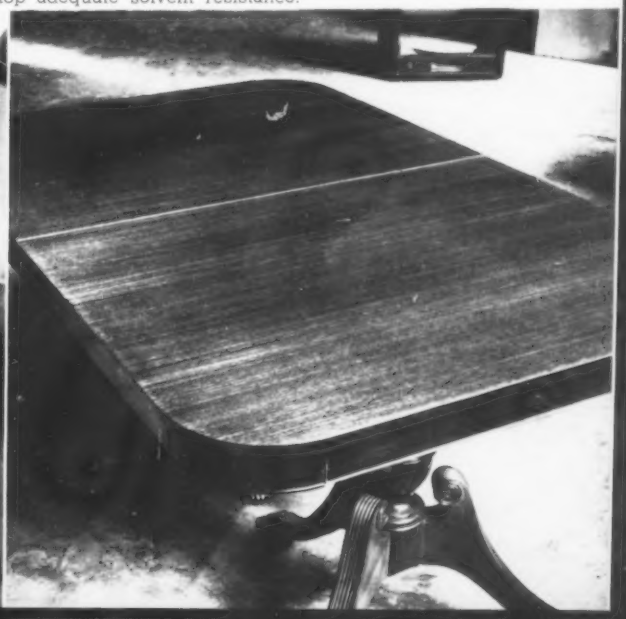
	Parts
SF-96-300 Silicone Fluid	5.0
Carnauba Wax	25.0
Mineral Oil	2.6
Mineral Spirits	58.9
Turpentine	8.5
	100.0

It must be pointed out that the mere presence of silicone in a furniture polish does not assure effective performance. The type and quantity of silicones used as well as quantity and quality of waxes, solvents, emulsifiers and other ingredients have an all-important effect upon performance. However, as has been so well demonstrated by many outstanding products now on the market, expert formulation with silicone and other top quality ingredients has produced the finest furniture polishes ever made.

It is the good covering power and the performance of silicones

Figure 5: Barrier coat sprayed on. Special preparation contains both bleached white shellac and an alcohol-soluble nitrocellulose, plus plasticizer, in solvent blend of alcohol and methylisobutylketone.

Figure 6: Finished job after final polish has been applied. If solvent-type silicone polish is to be used, the new finish should be allowed to dry overnight or longer to permit it to develop adequate solvent resistance.



which make them such good film formers. Their incompatibility makes them effective wax lubricants. These same properties which make the silicones so valuable have also created a problem in the furniture refinishing shops.

In some instances, surfaces previously polished with silicones could not be satisfactorily coated with lacquer or varnish. Craters or "fish eyes" due to failure of the lacquer to wet the surface properly often resulted. The cratering not only resulted after inadequate cleaning but in some cases after a most careful finish removal, sanding, and solvent cleaning job.

The refinishing problem having been recognized as an acute one by our company and by our polish manufacturing customers, a great deal of time and effort was expended to obtain a satisfactory answer[1].

A partial answer to the problem was achieved by addition of the same type of silicone fluid causing the difficulty to the lacquer or varnish. In many instances addition of the order of 0.01 to 0.05 percent of silicone such as "Smoothie" (Marson Corp.) eliminated poor wetting previously encountered. The addition of silicone fluid to the lacquer in many cases allows smooth spreading even though a trace of silicone remains on the surface. This simple step, while not a cure-all, has been successful in solving the problem in many refinishing shops.

However, for some refinishers, the cratering effect was so persistent that thorough cleaning and addition of silicone fluid were not completely satisfactory. This was particularly true when the furniture finish had been damaged enough to penetrate the lacquer and expose bare wood. In these cases the silicone had been absorbed into the pores of the wood and fluid continued to come to the surface in spite of repeated sanding and solvent cleaning. It became obvious that it was necessary to develop an impenetrable film which would both seal in the silicone and provide a satisfactory base for sealing and finishing coats.

Our first lead came through finding that shellac provided an effective sealing coat for silicones and that the alcohol solvents used in shellac would wet silicone surfaces without formation of craters or "fish eyes."

But shellac alone is not a satisfactory base for lacquer sealers and finish coats because of low water resistance, softness and poor adhesion.

Through the combined efforts of General Electric and Hercules Powder Companies the solution has been discovered. A barrier coat has been developed using alcohol soluble nitro cellulose in combination with shellac. The shellac provides the barrier and the nitrocellulose (Hercules SS grade ¼ second material) provides the good lacquer base. The barrier coat is manufactured by Star Chemical Co., Chicago, and Behlen Brothers & Co., New York. The refinishing procedure is now a simple one and follows conventional practice.

Figure 3 shows the problem of cratering. Notice the uneven, non-continuous coating of lacquer on this top which did not have the barrier coat applied.

In Figure 4 you see a mahogany dining room table top, badly marred and scratched, in need of refinishing. This top after thorough washing with turpentine and removal of finish with conventional lacquer remover was then rewashed with turpentine and sanded. The barrier coat was applied at this point as seen in Figure 5. Two light coats are better than one heavier coating. Over the barrier coat conventional finishing with lacquer sealers and top coats was carried out. Figure 6 shows the same table beautifully finished and ready for return to the home.

Thus, the occasional problem of refinishing silicone polished furniture is solved by the barrier coat technique.

Conclusion

SILICONES have probably exerted as great an impact and influence on the chemical specialties industry in a short period of time as any other single class of materials in history. Pictured on Page 137 are a few of the hundreds of consumer products containing silicones which are currently available on the market.

In addition to furniture and automobile polish products there are many other applications for silicones which are finding increasing acceptance in the homes of America. These products are making living easier and more pleasant for consumers everywhere by lightening work while at the same time making their homes more beautiful.

For example, high quality metal polishes and window cleaners containing silicone are currently being marketed. Silicone impregnated dusting and polishing cloths for use on furniture, automobiles and metal surfaces are growing in popularity.

Silicone resin treated exterior concrete and brick surfaces are rendered water repellent and resist damaging effects of freeze-thaw cycles with resultant chipping and cracking. Whitening of brick

(*Turn to Page* 165)

[1]General Electric application data sheet AD-15E, "Refinishing Furniture After the Use of Silicone Polishes."

Aerosol Room Deodorants

By Paul Checkovich*

Airkem, Inc.

THE aerosol industry owes its initial design and development to research carried out during World War II in the production of aerosol insecticides for the armed forces. The insecticide aerosol made it possible for our armed forces to campaign and live in insect infested areas.

Today the aerosol development is rapidly extending into all phases of chemical specialties in both the industrial and the household fields. While the insecticide aerosol still heads the list, room deodorants, hair lacquers, shave creams, etc. are growing by leaps and bounds. This paper deals with some of the basic principles involved in the development of an aerosol room deodorant.

Theoretical considerations in the design of an aerosol room deodorant must include the practical findings of the past methods of odor control. Such an aerosol can be either a deodorant or a masking agent. This paper will deal only with the development of a true deodorant. An aerosol deodorant must be rapid in action, must be effective in removing unwanted malodors, must not remove or conceal pleasant odors, and must not remove or conceal "friendly" odors such as illuminating gas warning agents.

Due to the necessity of having to use words possessing several meanings to describe deodorizing phenomena, the term "masking," as contrasted with "deodorizing" or "counteraction," should be defined.

According to Best and Taylor in their book, *Physiological Basis of Medical Practice*:

> "Strong odors tend to mask the weaker one. If two scents are of about equal strength a blend of the two is smelt or both are identified; but if one is considerably stronger than the other it alone, as a rule, is smelt."

This is the accepted concept of masking. They continue further and state:

> "On the other hand, certain pairs of odors in appropriate relative concentrations are antagonistic, and when the two are sniffed together both are diminished."

This, then, is what is meant by odor counteraction or neutralization. Best and Taylor illustrate the concept of odor counteraction or neutralization with the following statement:

> "Iodoform, for example, is antagonized by balsam of Peru, musk by bitter almonds and ammonia by acetic acid . . . Though the neutralizing effect may in some cases be simply chemical or physical in

*Paper presented before 41st midyear meeting, Chemical Specialties Manufacturers Assn., Chicago, May 17, 1955.

nature, in others there seems to be a true physiological antagonism, for the phenomenon is observed when mixing is avoided by leading the two odors directly one to each nostril."

Wick Deodorants

ALTHOUGH the problem of eliminating or controlling odors has been with us since history began, the first really successful deodorant for neutralizing odors in the household has been produced and marketed for only the past fifteen years. This product depends on the evaporation of carefully selected and compounded deodorant materials from a wick surface and is highly effective for the treatment of low intensity odors normally found in the kitchen and other areas of the home.

Aerosol room deodorants, as well as aerosol perfumes, are a natural outgrowth of the rapid development of the aerosol industry. Many of the basic principles involved in the transition of a perfume to an aerosolized perfume are inherent, or even magnified, when adapting a wick deodorant to an aerosol product. Perfumes are primarily designed to be evaporated off cloth or skin surfaces to produce a well blended effect at all stages of evaporation. However, if the same perfume is incorporated into an aerosol product, the same well blended effect does not not take place because instantaneous dispersion of aliquot portions of the perfume compound is produced. Due to this basic change in method of dispersion, the perfume may have two completely different end odors. Therefore, it becomes necessary to modify a perfume that is to be dispensed in aerosol form to achieve the desired results.

Like a perfume, a wick deodorant relies on the natural evaporation of blended deodorant materials. On the other hand, however, an aerosol product instantly nebulizes increments of the deodorant actives in the same proportion as they are present in the formulation. Because of this basic difference in method of dispersion, the odor of a deodorant used for wick dispensing will change in character if it is used in an aerosol without modification. It is necessary, therefore, to reformulate the deodorant actives in such a manner as to produce equivalent odors in both the wick and the aerosol product. This objective may sometimes be extremely difficult to achieve, especially when dealing with a well established product where the consumer associates a particular odor with effective deodorization.

Aerosol Deodorant Parts

AN aerosol room deodorant can be considered as having three basic component parts. These are: 1. the compounded deodorant; 2. the cosolvent; and 3. the propellent. Usually parts 1 and 2 are mixed together and are referred to as a concentrate.

The first step is the preparation of the compounded deodorant or active components. Selection of ingredients is based on past experience as to which types and combinations of essential oils and/or aromatics are effective as odor counteractants. These ingredients should be tested to determine their solubility in the propellent which is to be used and their compatibility with any other ingredients which will make up the finished aerosol. If we limit our selection of deodorant ingredients only to those that are completely soluble in the propellent, it would be extremely difficult to arrive at a satisfactory room deodorant.

Many resins and crystalline materials used in deodorant formulations are not entirely soluble in aerosol propellents. Therefore, it is often necessary to resort to co-solvents, or solvent extracts of such materials. The co-solvent must be odorless, non-staining, commercially available, and a mutual solvent for the deodorant materials and the propellent. Last, but probably most important, is the selection of a co-solvent which, when aerosolized, is non-toxic and non-irritating when inhaled. Of course, the co-solvent also serves as the dilution media which allows for the proper dispersion and subsequent distribution of adequate quantities of active components.

The practice of using co-solvents for preparation of concentrates is widely employed in the aerosol industry. In formulating an aerosol insecticide containing chlorinated hydrocarbons as part of the active ingredients, methylated naphthalenes have proved to be satisfactory as co-solvents. When packaging perfumes and colognes in uncoated glass aerosol containers, "Freon 114" a very inefficient solvent for essential oils, is normally used as the propellent. In this instance alcohol is used as a co-solvent in sufficient quantity to insure complete solubility.

When the concentrate has been finalized, the component parts of the proposed deodorant aerosol should be placed in pressure flasks and tested for clarity and compatibility of solution. We have found that accelerated results can be obtained if the flasks are refrigerated and kept at 15-20°F for 48 to 72 hours.

If these tests indicate that a stable compatible system has been achieved, several aerosols are prepared using the proposed production materials. These aerosols are then put through a series of screening tests for end odor, irritation, shelf life stability, and performance.

Aerosol End Odor

THE end odor of an aerosol is directly influenced by the size of the orifice valve openings, the pressure developed by the propellent and by the composition and viscosity of the formulation. It has been our experience that viscosity plays a major role in the odor produced by an aerosol. Several deodorant aerosols were prepared with all materials kept constant except for the viscosity of the concentrate. Odorless white mineral oil with Saybolt universal viscosities at 100°F ranging from 50 to 325 seconds was used as the co-solvent. When these aerosols were compared, it was found that there was a marked difference in

their odors. The more viscous oils, being less volatile, produce a heavier spray which settles at a faster rate and has a subdued and altered odor. In a like manner, the size of the orifice valve openings can influence the odor of an aerosol spray. The smaller orifice produces a finer spray, the odor of which differs from a wet, heavy spray which would be produced by a larger orifice. Therefore, it is imperative that production materials used meet the specifications of the valve, the propellent and the co-solvent which have been selected and lab tested.

Often the odor of an aerosol containing only the necessary deodorant materials does not possess a recognizable odor. If a particular end odor is desired by the manufacturer, it can be obtained by adding small quantities of the specific perfume called for; such as pine, floral, or other types. It must be emphasized, however, that considerable care be taken in the amounts of perfume materials used. Indiscriminate use of perfumes will offset the proper balance of the deodorant materials and the resulting product may become an inferior masking agent.

Irritation Evaluation

AT the same time the finished aerosol is evaluated for end odor, it must be tested for irritation. Compounds which show no reaction under normal use conditions, often cause irritation or stinging of the nasal passages when used in aerosol sprays. This problem cannot be solved by screening the individual ingredients. We have observed that many ingredients exhibit no irritation when sprayed individually, but are irritating when sprayed as part of a mixture. Conversely, it has also been observed that even though certain materials are irritating when sprayed individually, no irritation is noted when these materials are incorporated into a finished formula. An example of this type product is benzyl benzoate. The aerosol spray of benzyl benzoate is highly irritating. However, when small percentages of benzyl

Important in aerosol room deodorants is the selection of the basic perfume. Here, a perfumer has dipped a smelling blotter into one of hundreds of bottles uniquely arrayed before him in the perfume laboratory of the research and development laboratory of Lever Brothers Co. in Edgewater, N. J. Blotter is allowed to dry for days, or even months, to register the intensity of the fragrance as the perfume evaporates.

are incorporated into an aerosol with other aromatic and essential oils, the spray is non-irritating. The problem of tracing an irritant in a finished aerosol is sometimes extremely difficult. In any event, the irritants must be replaced with satisfactory substitutes.

Shelf-life Testing

AFTER all of the above problems have been satisfactorily resolved, it is essential that the finished aerosol be tested for shelf life. It is our experience that such a test should be conducted under normal storage conditions for a period of six months. Simultaneously, an accelerated test at a temperature of 45°C for a period of at least two months should be conducted. The aerosols under test should be weighed periodically to determine any loss in weight during storage. The maximum weight loss of an aerosol stored under normal room conditions for a period of six months should be below one percent of the contents.

The aerosol under test must be periodically checked for odor and spray pattern. Any deviation from the normal should be investigated by pre-chilling the aerosol, cutting it open and examining the component parts, including the valve and container.

At the end of the testing period, several aerosols should be pre-chilled, cut open and all the component parts examined. In a satisfactory product, the component parts will be in the same condition as when the aerosol was first prepared. These tests are extremely time consuming and before they are undertaken there should be reasonable assurance that the aerosol formulation is satisfactory.

Performance Testing

THE final test in the development of an aerosol room deodorant is performance. Since the aerosol is to be used as a room deodorant, the laboratory test procedures must duplicate the home situation as closely as practical. The standard test methods developed for evaluating the efficiency of a deodorant depending on evaporation off a surface for controlling odors are not readily applicable to determining

(*Turn to Page* 147)

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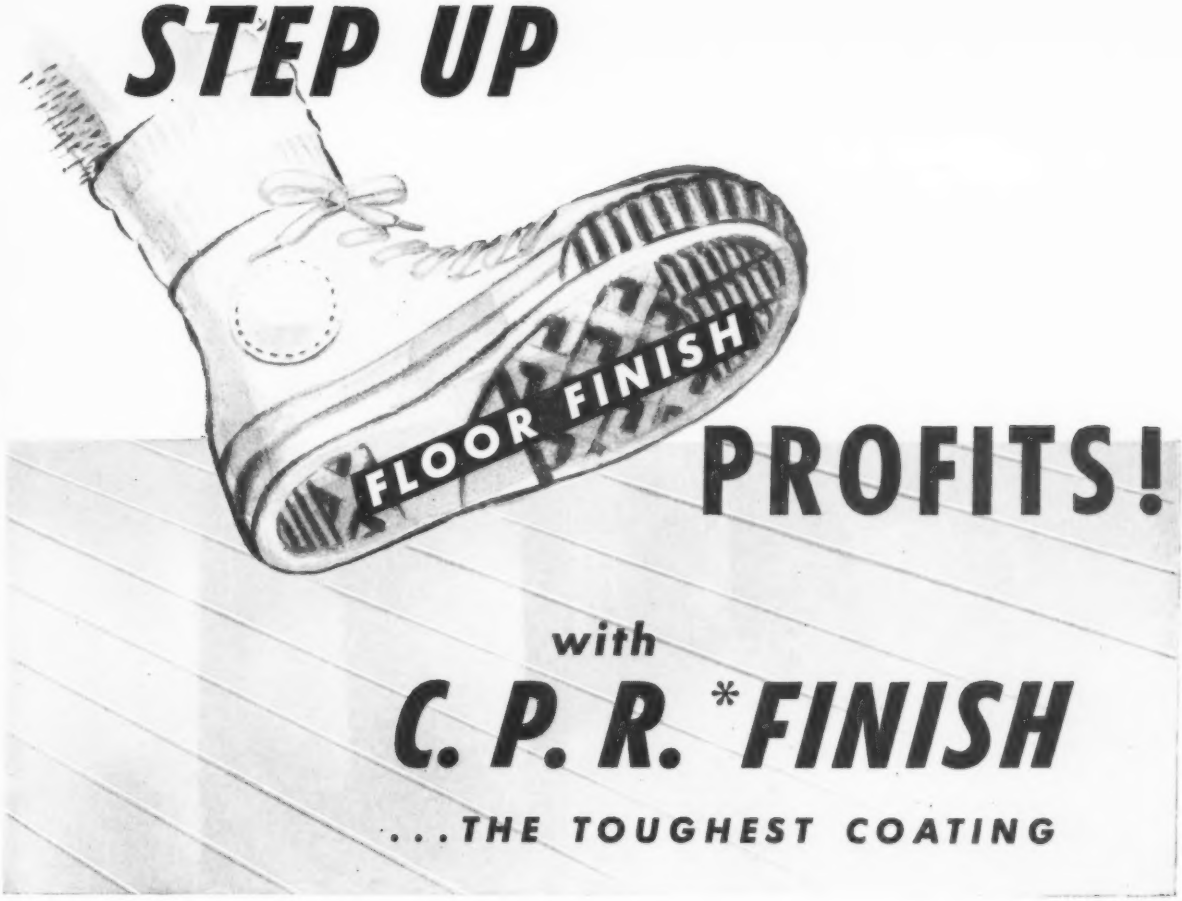

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Aerosol Room Deodorants

(*From Page* 143)

the efficiency of an aerosol deodorant.

The efficiency of a wick type deodorant is usualy evaluated in relatively small, compact testing equipment. Briefly, the basic principle used for this type of evaluation is as follows:

> A predetermined volume of air is contaminated with a known quantity of the malodorant under test in an odor evaluation chamber. A measured quantity of air containing a known amount of the deodorant vapors is then introduced into the chamber. The resulting atmosphere is evaluated for odor.

It is to be noted that in this method of evaluation, the counteractant vapors are obtained by evaporation. This is the same manner of dispensing as when the deodorant is actually used in the home.

The above method cannot be used for evaluating the performance of an aerosol deodorant. The aerosol functions, not by evaporation of its active components, but rather by nebulizing aliquot portions of the active ingredients, irrespective of any differences in the evaporation rates or vapor pressures of the individual constituents.

Another factor to be considered in evaluating an aerosol is the size of the test area. When the aerosol is activated in a room having a relatively large volume, the propellent, being highly volatile, is immediately dissipated and cannot be detected. However, when an aerosol is sprayed into a small confined space, the propellent vapors are not dissipated and hinder an odor evaluation.

We have found that the only valid test for determining the deodorizing properties of an aerosol room deodorant must be conducted in an actual room. For this purpose we have constructed three identical rooms, each of which has the walls and ceiling lined with aluminum to facilitate cleaning and to keep absorption of vapors to a minimum. The rooms are kept under a slight positive pressure to prevent infiltration of odors. A system of ducts allows for purging of the rooms with large volumes of clean air prior to conducting an evaluation.

An identical quantity of a reproducible malodor is introduced into two of the rooms. With one of these rooms serving as a control, the aerosol deodorant under test is sprayed into the other two rooms for the same length of time. A trained jury panel then numerically evaluates the odor in the three rooms as to total odor level, malodor level and deodorant odor level immediately after treatment, five minutes after treatment, 15 minutes after treatment, and one hour after treatment.

When evaluated by the above method, a satisfactory room deodorant will eliminate the malodor and will reduce total odor level when introduced into a room containing malodor. This elimination of the malodor and reduction of the total odor level should be apparent for at least one hour's duration.

It requires several months of training for one to become proficient in evaluating odors with any degree of reproducibility. Short training periods, or no training in odor evaluation leads to unreliable, haphazard results. This may explain, in part, vast differences in odor evaluations obtained by various observers.

Summary

IN summary then, the steps for the development of an aerosol room deodorant may be listed as follows:

1. Preparation of deodorant materials.
2. Selection of co-solvent.
3. Preparation of concentrate.
4. Determination of compatibility.
5. Determination of end odor.
6. Determination of irritation.
7. Determination of shelf life stability.
8. Determination of performance.

— ★ —

Fungicide Report Reprints

A report on agricultural fungicides has been published recently in reprint form by the American Medical Association's Council on Pharmacy and Chemistry. This is part one of a series entitled *Outlines of Information on Pesticides*, that appeared first in the AMA *Journal*, of January 15, 1955. The series is intended as a means of speeding communication of basic facts on pesticides to the medical profession and as an aid in teaching.

— ★ —

F.T.C. Cites Fly Trap Ads

Dioptron Co., Milwaukee, and Joseph Breck & Sons Corp., Boston, were charged last month by the Federal Trade Commission with misleading advertising of the "Big Stinky Fly Trap" and "Big Stinky Control Fluid."

It is at least a year since the Breck company has handled the distributorship or has run any advertising of the product, according to Luther Breck. John Seegar, vice-president of Dioptron, termed the action "mighty stale." He pointed out that: "By agreement with other government agencies, mainly the Department of Agriculture, we long ago corrected the objectionable matter."

F. T. C. said Breck had an exclusive distributorship for the two products in the New England area and, from material furnished by the Dioptron Co. and with Dioptron's financial help had made statements in advertising such as: "No more flies" . . . "Your whole place can be free from annoying disease-carrying flies!" . . . "Rids whole town of flies, not a single case of polio." The complaint asserted that the fly trap and baiting fluid would not eliminate flies, prevent any possibility of disease caused by flies, nor prevent polio. In addition, F. T. C. charged Dioptron with misrepresenting that its fly trap was nationally approved for use by the Boy Scouts.

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Fly Control on Livestock

— *Does it PAY?*

Part II

By George C. Decker[1]*

BRUCE and Decker (9) found that over a period of 11 weeks milk production for herds receiving only the mediocre protection from flies afforded by the standard stock sprays then on the market declined 35 per cent, whereas in two series of herds where almost perfect control was attained through the use of DDT sprays, the decline in milk production over the same period was only 10 and 13.3 per cent respectively. They reported a high degree of inverse correlation between changes in milk production and fly abundance. Two of their graphs combined into one are presented here (Fig. 1) to illustrate several points. It would appear that reduction in milk flow attributable to fly activity was progressive and the spread between milk production in treated and untreated herds increased as the season progressed. It may be noted that milk production for all three sets of herds was declining at about the same rate until treatments were started on July 24. Then the residual treatment which caused an abrupt drop in fly populations induced a rise in milk production. The light daily treatments did not bring the flies under control for nearly a month and milk production continued to decline during this period. However, when the flies were finally eliminated and held under perfect control these herds outperformed all others. There were no completely untreated checks in this experiment, but by extrapolating trends up to the time of treatment, July 24, one might speculate that after August 1 even the herds receiving conventional cattle sprays may have derived considerable benefit from treatment.

The work of Bruce and Decker (10) on tabanid control is perhaps even more convincing. "Analysis of gross data obtained from 25 herds of dairy cattle showed a highly significant beneficial change in butterfat production occurring at the time of treatment and continuing for several weeks. There was a high degree of inverse correlation between changes in butterfat production and horse fly abundance." One of their graphs is included here (Fig. 2) to illustrate the spectacular reversal in the trend of butterfat production at the time of treatment.

Perhaps because of the size and viciousness of tabanids (31) results are more quickly apparent. However, going back to Fig 1 and the herd receiving the heavy residual treatment, the apparent reversal of trend immediately after treatment on July 24 indicates that such reversals may occur even in the case of stable flies if the change in fly population is sufficiently large.

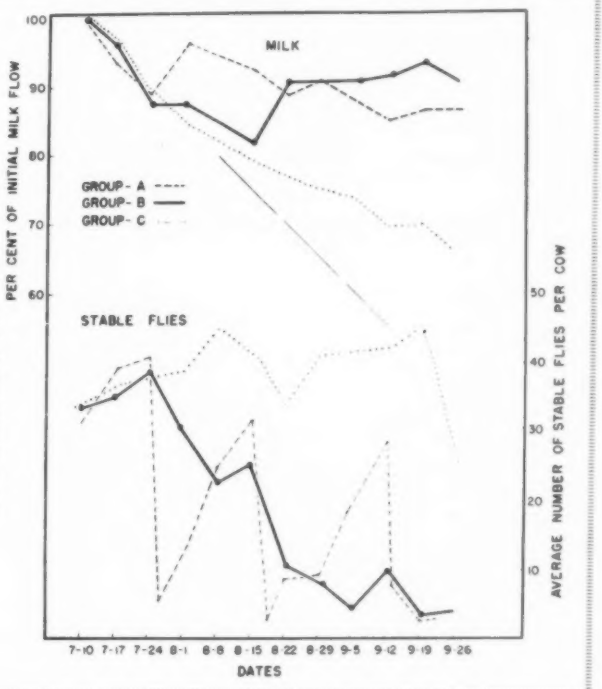

Fig. 4. Average per cent of the initial milk production per cow and average number of horn flies per cow: (A) herds sprayed with residual deposits of Rhothane or DDT, (B) herds sprayed daily with small quantities of DDT, and (C) herds sprayed with conventional repellent type sprays.

[1]Entomologist and head, Section of Economic Entomology, Illinois Natural History Survey and Illinois Agricultural Experiment Station, Urbana.

*Paper presented before 41st mid-year meeting Chemical Specialties Manufacturers Assn., Chicago, May 17, 1955.

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Research in the last decade has also developed data to show that meat production may be increased through effective fly control. Laake (23) demonstrated that with the effective control of horn flies on pastures in Kansas, cows gained about 10 pounds per month more than comparable untreated animals and calves made an even better showing. The data presented indicated gains in favor of treatment over checks ranging from 15 to 74 per cent, e.g. in one five-month study treated animals gained 225 pounds, checks only 174, indicating a 51 pound or 29 per cent gain in favor of fly control.

A note in *Croplife* in 1955 (1) refers to the work of Cutkomp in Minnesota who, working with beef heifers, found that one group that was sprayed gained an average of 25 pounds each from June 16 to Aug. 9, whereas another group, not sprayed, lost a pound each during the same period. Cutkomp was quoted as follows: "The best spray gave almost 100% elimination of horn flies. Heifers which gained 25 lb. average had only about one horn fly on each. But unsprayed animals had an average of 58 horn flies apiece."

Bruce and Decker (10), working in southern Illinois, found that steers protected from tabanid attack over a 28-day period gained 20 to 30 pounds per animal more

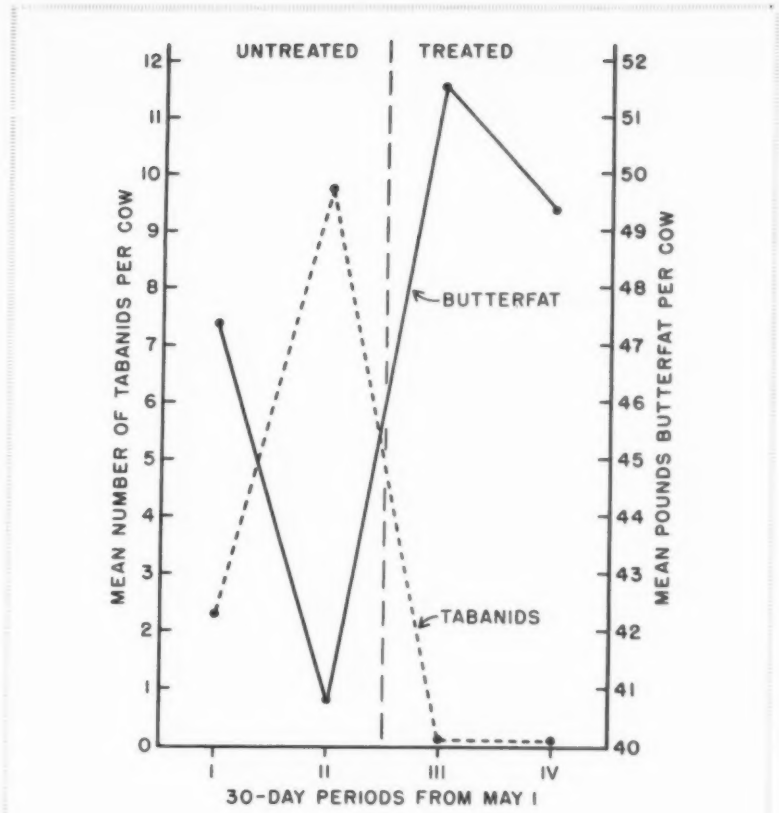


Fig. 2. Mean number of tabanids and mean pounds butterfat produced per animal during four successive 30-day periods for seven animals in similar stages of lactation. Treatments started the last day of the second 30-day period.

Fig. 3. Regression line drawn to show the high degree of inverse correlation between mean number of tabanids and pounds of beef gained per steer for six herds.

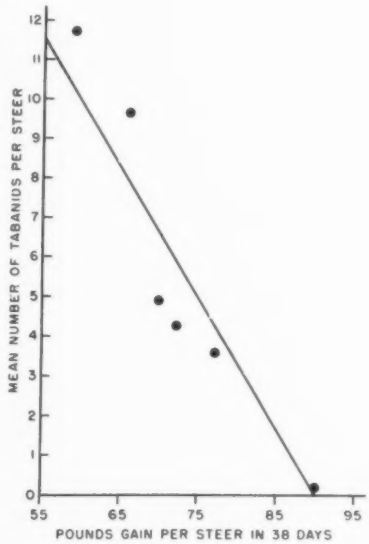
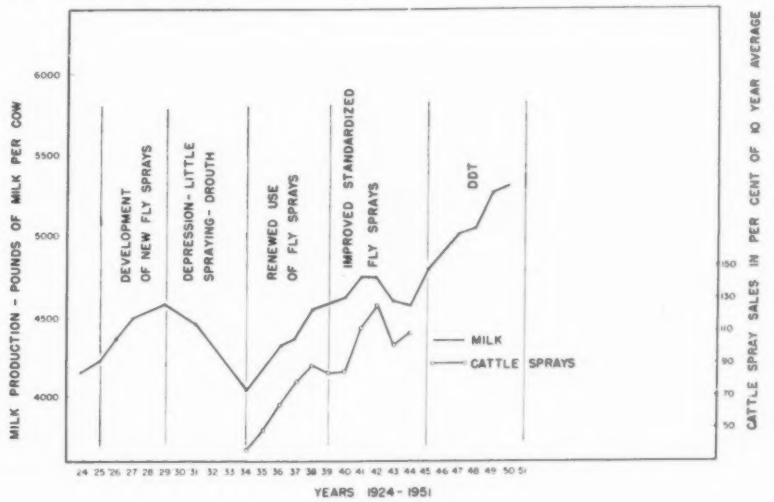


Fig. 1. Mean annual milk production in pounds per cow (1924-51) and cattle fly spray sales in percent of 10-year average, 1935-44, with notations on factors affecting fly spray consumption.


MILK PRODUCTION - POUNDS OF MILK PER COW
CATTLE SPRAY SALES IN PER CENT OF 10 YEAR AVERAGE
DEVELOPMENT OF NEW FLY SPRAYS
DEPRESSION - LITTLE SPRAYING - DROUTH
RENEWED USE OF FLY SPRAYS
IMPROVED STANDARDIZED FLY SPRAYS
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than unprotected steers in a comparable adjacent pasture. They also show a good inverse correlation between weight gains and tabanids per animal, Fig. 3.

By studying milk production records (1924-1951) one finds trends that have considerable in common with the historic development and usage of cattle fly sprays, Fig. 4. Attempts to gather reasonably accurate data on stock spray sales were only partially successful. Little or no data were available for years prior to 1934, but five major companies in business during the period 1935-1944 supplied sales data for that period on a confidential basis. When summarized and compared with milk production records for the same period, the two sets of data were unbelievably similar. Certainly it would be presumptuous to claim a cause and effect relationship, but that possibility cannot be wholly ignored. The implication is even more striking when one notes the constant upward trend after the introduction of DDT in 1945 gave a very high degree of fly control with a minimum of potential damage to animals.

Despite the conflicting opinions of some eminent entomologists and dairy scientists, on the basis of all available data, the writer can only conclude that under normal field conditions biting flies do adversely affect both milk and meat production. I strongly suspect—in fact, I firmly believe—that when and if we ever get sufficient data together they will show conclusively and beyond any shadow of doubt that reduction in meat or milk production will be in direct proportion to some appropriate measure of exhaustion or devitalization of the animal concerned and traceable to loss of blood, over-exertion, etc. Thus, the extent of such losses for any herd, in any given season or area, will be dependent upon the length of the season, the density of the fly population and the species involved.

We now have fly sprays that will effectively control flies without injury to livestock, and their proper use can and should be one of the most profitable steps in animal production.

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★

Dr. Carle Bigelow Dies

Carle M. Bigelow, recently retired assistant to the general manager of the Fine Chemicals Division, American Cyanamid Co., Bound Brook, N. J., died May 10 after an illness of several weeks. He was 65 years old. Dr. Bigelow had been with Cyanamid since 1934. He was a director of the Drug, Chemical and Allied Trades Section of the New York Board of Trade and served as chairman of its executive committee in 1946.

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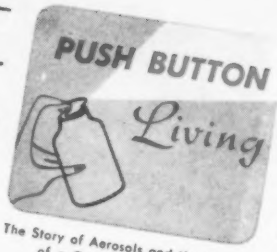

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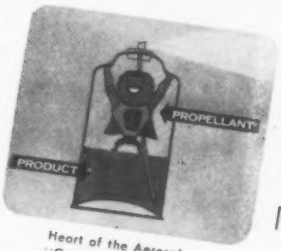

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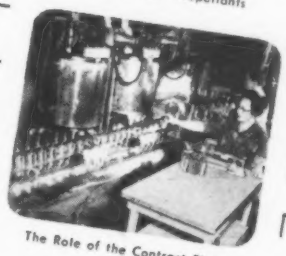
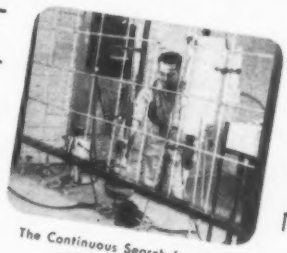


The Role of the Contract Filler



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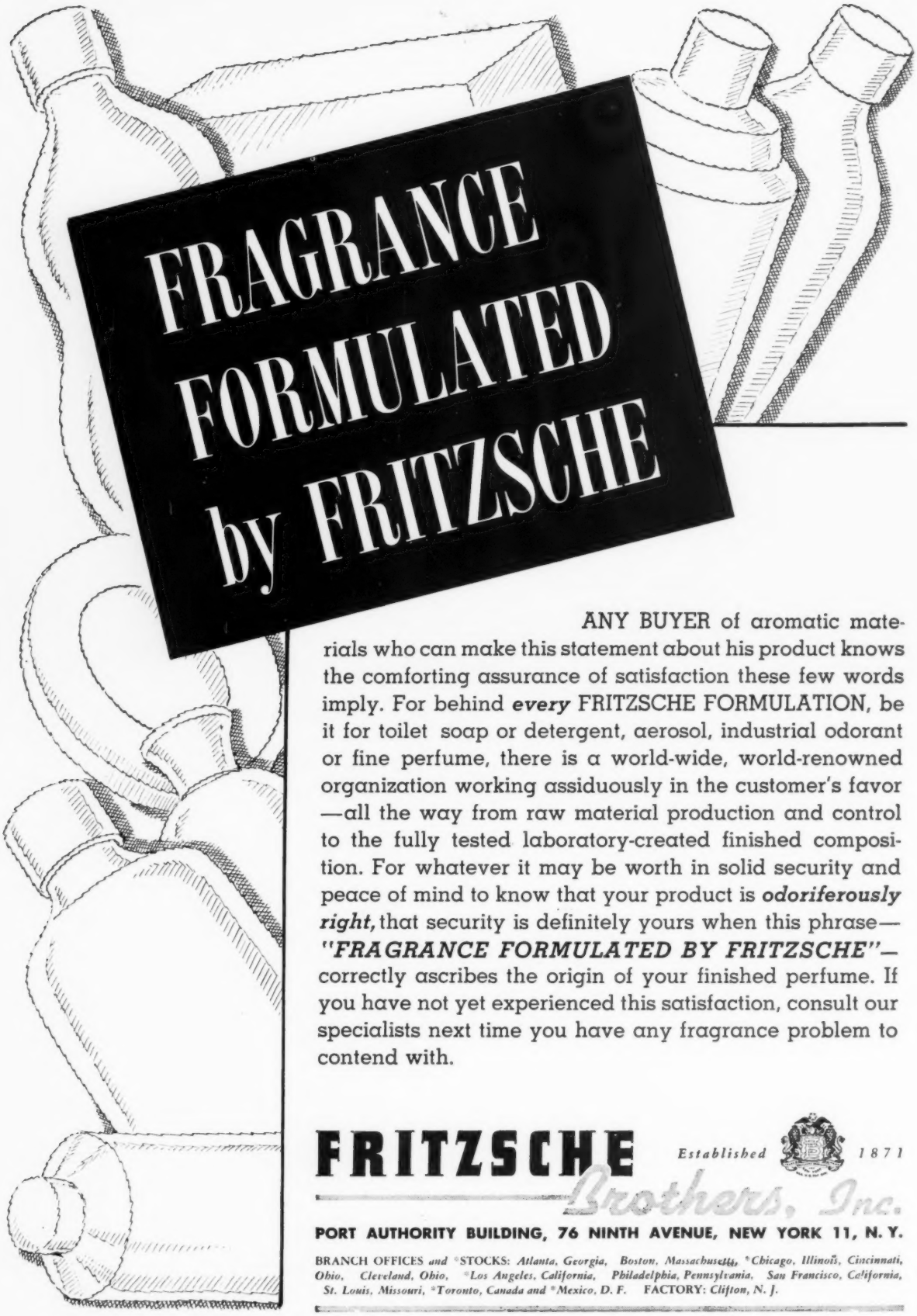

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Illustrating behavior of skein of synthetic yarn when charged with static by rubbing with glass rod.

ANTISTATIC SPECIALTIES

Part II

ANTISTATIC agents can be combined with a nonionic cleaning detergent such as "Atlas G-2684" or with an anionic composition such as "Atlas G-711" mixed with "Span 80." Such combinations can be dissolved in mineral oil or Stoddard solvent to make a concentrated charged soap which is then added to the perchlorethylene or Stoddard cleaning solvent. Concentrations as low as 0.1 percent of this type of antistatic agent in the cleaning solvent are effective. Since from one to four percent of charged soap is usually used in the cleaning solvent, the presence of 10 percent of antistatic agent in the charged soap is sufficient. It should also be noted that the strongly hydrophilic nature and the surface activity of antistatic agents of this type assist in the removal of water-soluble soil.

Home Laundering Use

THE home laundering of synthetic fabrics offers another large field for the application of antistatic agents. Most lingerie is synthetic and home laundered. By adding an antistatic agent to the last rinse, these garments can be rendered static free. From one to two percent antistatic agent in rinse is usually sufficient to give adequate protection. Since most garments of this type are worn and laundered frequently, permanence of antistatic activity is not necessary and a nonionic agent such as "Tween 20" is very satisfactory. If more persistence is required a cationic such as "Atlas G-3780" is recommended. Antistatic products for home laundering use are extremely simple to formulate since they need only to consist of an aqueous solution of the antistatic agent suitably perfumed and packaged. Water soluble antistatic agents may also be included in the components of the newer home-applied fabric refinish-

By Richard D. Fine
Atlas Powder Co.

*Presented before the 41st midyear meeting of the Chemical Specialties Manufacturers Association, Drake Hotel, Chicago, May 17, 1955.

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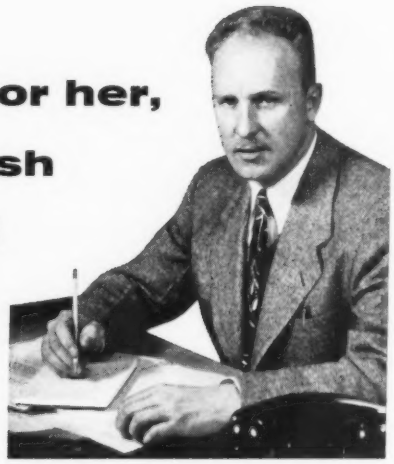
but luckily for her, this polish maker does!



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An electrostatic voltmeter apparatus arranged for measurement of static charges on cloth at Atlas research laboratories, Wilmington, Del. The motor, with constant speed control, pulls the fabric back and forth over a metal bar, and the static charge is conducted to the voltmeter.

ing treatments such as those based on methylcellulose or synthetic resin dispersions. Their formulation with detergents is feasible enough from the technical standpoint but the practice of rinsing out the detergent removes the agent from the fabric. An actual synergistic effect was noted when a nonionic detergent "Renex 20," was combined with a nonionic antistatic agent, "Tween 20," with the result that a substantial reduction in the amount of antistatic agent normally required could be made.

Chemical specialty products used in the mill processing of textiles have been making extensive use of antistatic agents for the last few years. Most up to date winding and coning oils, wool oils, staple processing oils, yarn lubricants and producer finishes now have antistatic properties. Although a number of oil soluble antistatic agents are available, it has been noted in a number of cases that better static protection was secured by using a hydrophilic antistatic agent and making it oil soluble through the use of a lipophilic coupling agent of the oleate ester type such as "Span 80." This is probably due to the better moisture retaining properties of such a system.

In formulating antistatic textile oils, from five to ten percent of a good antistatic agent is usually adequate. Such oils are usually of the self-emulsifying type and the antistatic agent will frequently function as all or part of the emulsifier. A number of antistatic agents are themselves good lubricants of softeners for textiles so that these properties should be known and utilized in making a selection. Some of the nonionic polyhydric alcohol esters have a combination of properties which make them very satisfactory single component textile assistants which can be prepared and sold either in their original form or as concentrated solutions or emulsions. Other textile processing products which can be formulated with antistatic agents are sewing thread lubricants, warp sizes, hosiery finishes and fabric finishes. Where durability to washing and dry cleaning are required, the cationic agents have given the best performance but complete fastness on all fibers has not yet become attainable with the present antistatic agents.

With Floor Waxes

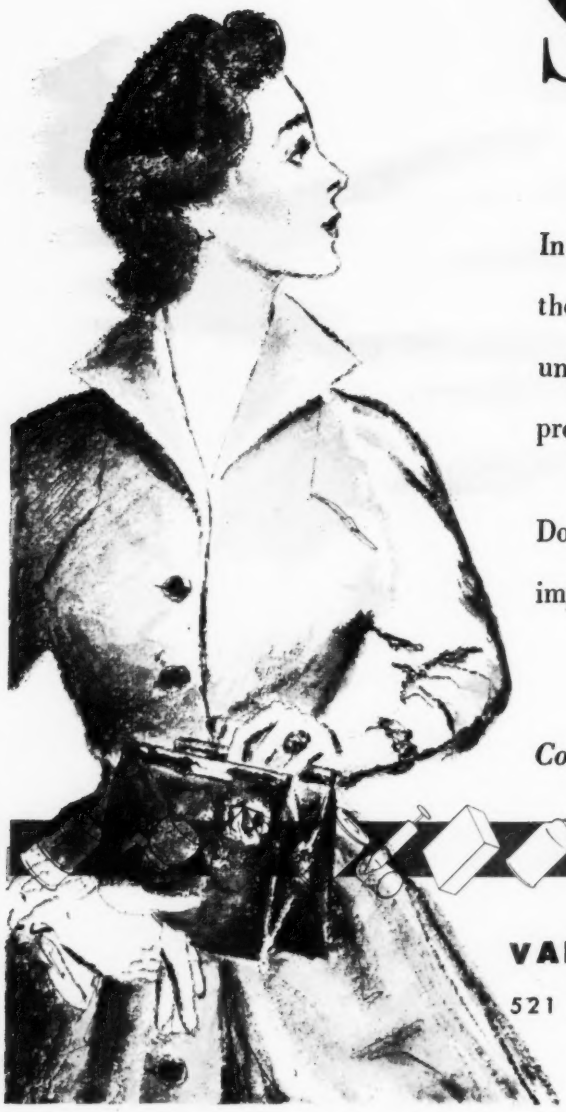
TESTS have been made at the Atlas central research laboratory on the effect of adding antistatic agents to floor waxes. Three commercial products: a paste wax, a liquid solvent type wax and a self-polishing emulsion wax were used. These waxes were applied according to directions to linoleum. After drying, the waxed linoleum was rubbed with a woolen cloth and any static generated was detected by observing the attraction of ash particles. The particular products tested showed measurable static generation except in the case of the paste wax. A cationic and a nonionic antistatic agent were then added to the liquid wax and the self-polishing wax at a concentration equivalent to one percent of the total solids. The particular cationic agent used was found to be incompatible with the self-polishing wax, which was not unexpected, but it and the nonionic agent did not affect the solvent liquid wax. No static was detectable when the waxes containing these agents were applied and tested in the same manner as the controls. These tests seem to indicate that antistatic agents can function in floor waxes. With the variety of agents available, I believe that suitable antistatic agents can be selected which will not impair the water resistance or other desirable properties of floor waxes. The extensive use of plastic flooring has created quite a static problem in many places and floor waxes which give better static protection are required. The attraction of dust and lint to polished metal and finished wood surfaces and glass is also increased by static charges generated through friction and should be reduced by the use of antistatic agents.

Plastic articles, photographic film, phonograph records, fur, human hair and even the family cat can be made static free by the application of the proper agent suitably formulated.

A number of antistatic agents are suitable for packaging in aerosol containers. In the case of a polyoxyethylene alkyl amine type such as "Atlas G-3780" or a nonionic such as "Tween 20," it was found that solutions of from 10 to

THE

selling force of Scent



In paints, aerosols, insecticides,
the elimination or improvement of inherent
unpleasant odor has time and again
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Don't ignore odor — improve it, and
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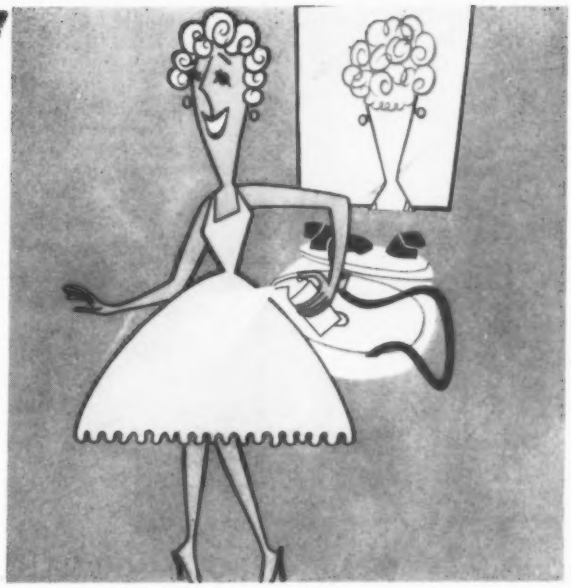
521 WEST 57th STREET, NEW YORK 19, N. Y.

20 percent concentration in isopropyl alcohol are miscible with a fluorinated hydrocarbon propellent in suitable ratios to give good discharging performance. The isopropyl alcohol or other suitable diluent is recommended to render the antistatic agent miscible with the propellent and to reduce the viscosity of the agents so that good discharge and distribution is obtained.

Before concluding the subject of static control with a description of test methods, mention should be made of chemical agents which promote static. It is sometimes desirable to do this in order to increase the dust holding capacity of things like dry mops. We have found that it can be done quite readily with compounds which, strangely enough, are very closely related to some of the antistatic agents. The more completely esterified polyhydric alcohols often exhibit this property and in one case cotton mops are being treated with an emulsion of such an ester for use in a hospital.



Aerosol antistatic sprays for milday's silk and taffeta dresses are growing in popularity. Photo is a frame from du Pont's new aerosol movie, "The Spray's the Thing", which was produced for the Kinetic Chemicals Division.

Testing Anti-Statics

IN order to develop suitable antistatic agents and select the ones best adapted to a particular use, it is necessary to have satisfactory methods of testing. Both simple screening methods and more precise research procedures are available. The ultimate test, of course, is actually to put the best selections into service and observe their action under controlled operating conditions.

Probably the simplest method of testing for static is to rub the surface being tested with another substance and then observing the extent to which it attracts small light particles such as cigarette ashes. This can be done on any solid surface or fabric by taking a small portion of the material and rubbing it vigorously with a piece of a fabric. Several types of fabric should be tried in order to develop a charge.

After rubbing the surface, the piece of test material should be picked up by the edges with the fingers and slowly brought face downward toward a smooth sheet of paper on which have been placed some well broken up fresh cigarette ashes. If the surface is charged, it will attract the ashes while still well over an inch away from them. The smaller the charge, the closer the surface can be brought toward the ashes without attracting them. By applying various antistatic agents to the surface at different concentrations, a comparison of agents can be made in this manner. The test specimens may be aged, heated, washed, abraded, etc., to determine the persistence and durability of the treatment. In this type of testing and in all other tests relating to static evaluation, it is necessary to maintain uniform humidity conditions when making comparisons. The humidity may, of course, be varied if desired to observe the effect on static protection.

In testing textile antistatic agents it is often satisfactory to treat skeins of yarn with the antistatic agent in solution, centrifuge the skeins to remove excess solution, dry them and then evaluate their static properties by the following procedure:

Loop one end of a skein over a glass hook attached to a firm support and pull it taut with another glass hook held in one hand. While thus tightly held the skein is stroked vigorously a number of times with a rod made of a material which gives it a static charge. Rods of glass, porcelain, hard rubber, various plastics or metals may be used. Metal rods should be provided with an insulated handle. After stroking the skein, the tension under which it is being held should be released. If a substantial static charge has been acquired, the yarns in the skein will open out to form a large balloon. If no charge is present they will remain undisturbed. The degree to which the yarns open out can be set up as an index of the effectiveness of the antistatic agents being tested. Since the surface of the rod may pick up traces of the antistatic agent during rubbing, it should be cleaned between uses in a solvent mixture of carbon tetrachloride and alcohol. Wash fastness, persistence, etc., can be evaluated by this test.

When applying an antistatic agent from a solvent other than water it is usually advisable to place the desired amount of solution in a beaker and work the textile specimen in it until the solvent has evaporated leaving substantially all of the antistatic agent on the textile material.

Although the above described methods are rather crude,

(*Turn to Page* 197)

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Jefferson Moves to Texas

Jefferson Chemical Co., transferred its headquarters and about 50 employees from 260 Madison Ave., New York, to the Mafridge Building, 411 Fannin St., Houston, Texas, on July 1, it was announced by George R. Bryant, president. Jefferson Chemical is owned jointly by American Cyanamid Co., New York, and The Texas Co. The firm's main plant is at Port Neches, Texas, the research laboratory at Austin. Sales offices are located in New York, Chicago, and Houston.

Detergent Book

(*From Page* 85)

detergent raw material. It treats combinations of synthetics and soaps, synthetics with synthetics, and especially the addition of builders, both organic and inorganic, and their effects. CMC and phosphates are discussed in great detail. Sample formulations are suggested for representative products of the light duty, heavy duty, combined light duty and dishwashing, and smooth surface cleansing groups. Some of the best known branded products are listed with their formulations. A lesson in composition (Kompositionslehre) concludes this chapter. It covers the building of a heavy duty syndet by demonstrating step by step the development of one such product and by comparing each of the syndet's characteristics with the corresponding characteristic of a soap product intended for the same purpose.

Chapter IV, dealing with production methods, lays particular emphasis on spray drying and spray drying equipment.

The applications of syndets and wash- and surface-active substances in the household, in various industries and in the commercial laundry are described in Chapter V. In the domestic field light duty, heavy duty, and general purpose and dishwashing compounds are treated. Uses of syndets and surfactants in 15 different industries are briefly described. Commercial laundering with syndets and soap, with syndets and additives, and with built syndets is evaluated and various procedures for different soils and textiles are given.

"Practice and Problems with Synthetic Washing and Cleansing Compounds," the sixth chapter, summarizes the effects and characteristics of particular practical significance which are in some respects still problematic. Soil carrying capacity, skin reaction and skin protection, biological effects, corrosion, hygroscopicity and agglomeration, and finally the making of synthetic bars are discussed here.

Chapter VII describes important use tests and several methods for qualitative analyses.

The economic importance and possibilities of future developments of synthetic detergents are discussed in Chapter VIII. An optimistic forecast is well supported by extensive statistical material from many producer and consumer countries.

The thread of comparison of syndets with soap runs right through the book. Dr. Stuepel remains impartial at all times. Among the 2000 literature references American authors are well represented. The volume carries 225 pictures and 234 tables. Dr. Stuepel's style is lucid and easy to read. The book is an encyclopedic text, offering a complete survey of the present status of the science and technology of synthetic detergents.

Silicone Polishes

(*From Page* 137)

surfaces due to efflorescence is also virtually eliminated by silicone treatment.

Silicone treatment of various textiles has made possible raincoats, suits and other garments that remain water repellent as well as spot and stain resistant even after several dry cleanings. This treatment is also being used on upholstery and drapery fabrics. These same water repellent properties are now being used to good advantage on many leather goods including suede jackets and shoes.

Silicone fluids are appearing in new cosmetic products on drug store shelves everywhere. Hand creams and lotions are particularly outstanding for protection against many commonly encountered water borne irritants.

Silicone rubber baby nipples will last several times as long as those made with conventional rubber. New electric and gas ranges are now available with silicone rubber door gaskets. Electric irons last longer and perform better because of silicone rubber insulation and ironing board covers are impregnated with silicone for resistance to scorching and a smooth low friction surface.

The number of silicone applications and products is growing almost daily. The future is bright for new markets created by new ways of using this unique and versatile family of compounds.

The silicones which have been so useful in furniture and automobile polish have not yet penetrated the large floor polish market. We are looking forward to the day when people will be literally walking on silicones as well as enjoying their benefits in automobile and furniture polish.

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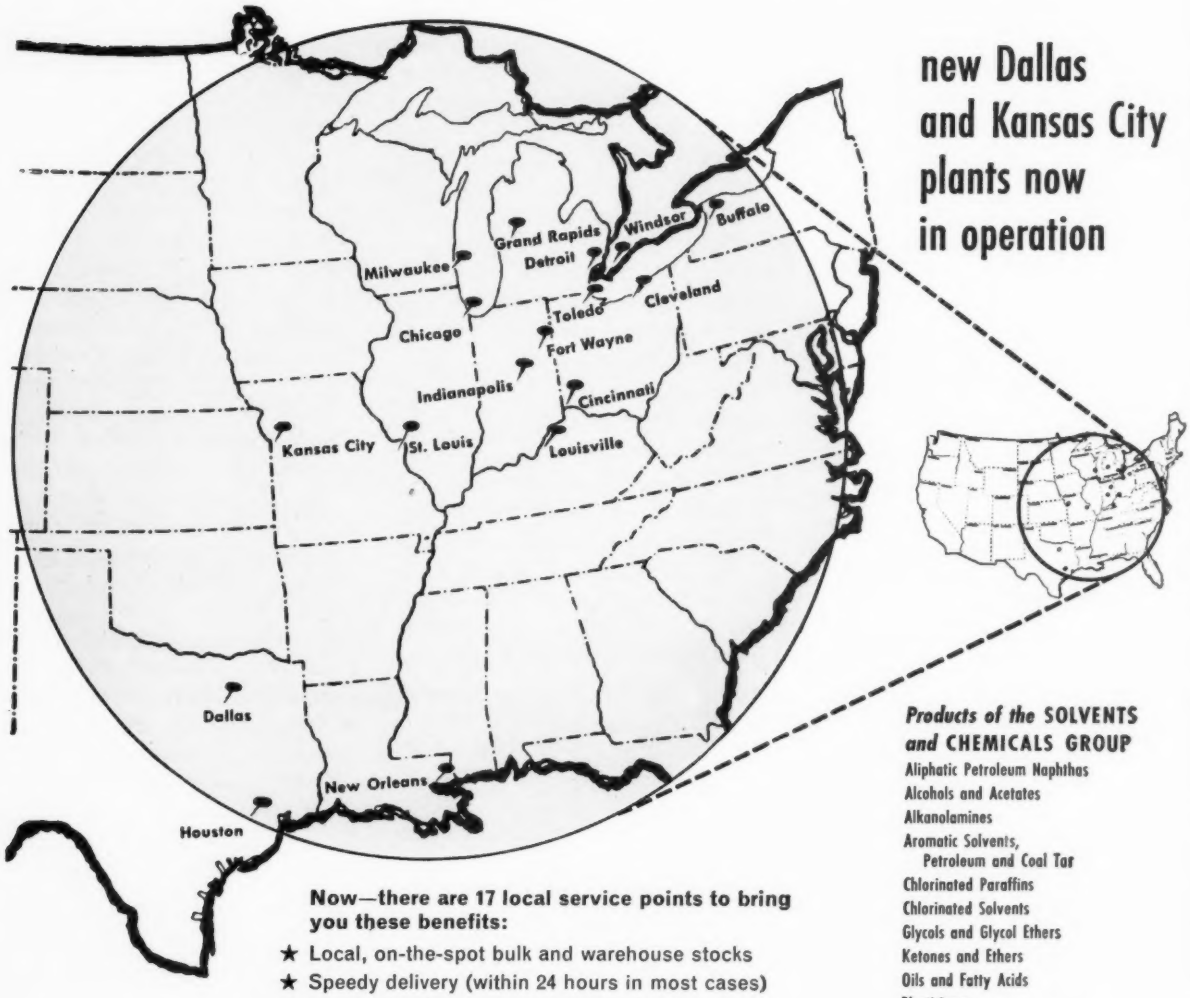

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Table X. Suggested Liquid Dishwashing Detergent Formulations
Parts by Weight

% Activity	Approx. Alkylaryl Sulfonate	Nonionic	Other Surfactant	Solvent
40	33 Sorapon SF-78	12 Nonionic No. 5	—	55 Water
40	35 Ultrawet 60-K	14 Nonionc No. 5	6 Ninol AA-62	45 Water
40	23.5 Sorapon SF-78	14 Nonionic No. 5	6 Ninol AA-62	56.5 Water
30	20 Ultrawet 60-K	6 Nonionic No. 5	20 Alipal CO-436	29 Water 25 Alcohol
40	37 Sorapon SF-13	13 Nonionic No. 5	22 Alipal CO-436	18 Water 10 Alcohol
50	35 Ultrawet 60-K	10 Nonionic No. 3	33 Alipal CO-436	10 Water 12 Alcohol

Foam Improvers

(*From Page* 40)

end point is still very much inferior to the foam end point.

It has been found, however, that a still further improvement in detergency can be effected by the employment of a 3-component system. This effect is shown in Table IX.

As stated previously, it has been impossible to consider all of the possible combinations of ternary mixtures and the ones illustrated here are merely representative and were chosen primarily on the basis of high foaming anionics which lend themselves readily to the formulation of liquid products. Thus, it is shown that it is possible to obtain, by correct formulation, products which possess both high detergency and foam stability.

Liquid Concentrates

IN any formulation to be used in a liquid form, the stability and clarity of the concentrated detergent is of considerable importance. For this reason, some work was carried out on the formulating of some of the more promising compositions into stable liquid concentrates. In general it was found that the nonionic products, particularly Nonionic No. 5, had a very definite solubilizing effect on the "Sorapon SF-13" as well as other salt free alkylaryl sulfonates evaluated. It was also discovered that concentrates in the 30 to 50 percent active range could readily be prepared which were of a fairly low viscosity, showed haze points of 0°C. or less, and which although they became quite viscous or solidified at very low temperatures, did not exhibit any phase separation but returned readily to their original condition on warming back to room temperature. The addition of small amounts of ethyl or isopropyl alcohol, of course, further depressed their haze points and reduced their viscosity. It should also be mentioned that a large variety of various alkylaryl sulfonates have been evaluated and while some differences in foam and detergency properties were noted with different samples, they all improved in foam and detergency when used with the subject nonionics.

Some typical formulations which are satisfactory as liquid light duty detergents appear in Table X.

Table XI. Representative Heavy-Duty Formulation

21% Primary Detergent
4% Foam Stabilizer
20% Sodium Tripolyphosphate
20% Sodium Pyrophosphate
6% Sodium Metasilicate
0.5-1% Carboxymethyl Cellulose
Remainder Sodium Sulfate

Built Formulations

IN addition to evaluating these nonionic products as foam stabilizers for unbuilt formulations, some time was also spent in investigating these products as foam stabilizers for heavy-duty built formulations. Although the work has not been as comprehensive as the liquid detergent work, definite evidence has been obtained to show that these products are of considerable value in improving both the detergency and foam stability of built formulations, based on alkylaryl sulfonates, "Igepons," and "Alipal CO-433."

Some typical built formulations were prepared as represented in Table XI.

Using this formulation employing Nonionic No. 3 as the additive, the results obtained using our dishwashing test are shown in Table XII.

In addition, qualitative tests have been carried out, in a conventional upright agitator-type washing machine, where a comparison of the relative foam heights of a built alkylaryl sulfonate with and without the nonionic additive was made. These tests indicate that an increase in foam heights is accomplished when the foam additive is employed.

Finally, cotton detergency tests were carried out to determine the effect of these nonionics on built alkylaryl sulfonates.

In order to evaluate these cotton detergents in as realistic a manner as possible, a test was de-

Table XII. Dishwashing: Built Formulations
0.2% As is basis
Easton, Penna. Tap Water (50-70 ppm.)

Primary Detergent	Additive	Dishes Washed Foam End Point
Sorapon SF	0	9
Sorapon SF	Nonionic No. 3	13
Alipal CO-436	0	6
Alipal CO-436	Nonionic No. 3	11

Table XIII. Maytag Detergency Test: Built Formulations
0.2% as is basis

Primary Detergent	Additive	Soiled Cloth Washed Reflectance Test Fabrics Dirty Cloth Cotton	Crl No. 2	Nylon
Sorapon SF-78	0	36.4	67.7	80.2
Sorapon SF-78	Nonionic No. 3	37.8	69.5	80.3
Nonionic No. 3	0	39.5	69.1	80.6

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Sample and literature on request

Sterwin Chemicals

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vised using a regulation size conventional Maytag washing machine. A ballast of six pounds of one yard, square cotton cloths were used. To these were pinned a number of soiled swatches having dimensions of one by two inches. A total of three different types of soiled swatches was employed, namely, two cotton, one soiled with a grease-carbon type soil (Test Fabrics) and the other padded from an aqueous slurry using a natural type soil; and nylon also soiled with the natural type soil. Washing time was 15 minutes, temperature, 120° F., concentration of detergent was 0.2 percent and Easton, Pa., tap water (50-70 ppm. average) was used. The results obtained using a built formulation as represented in Table XIII are illustrated in Figure 3. Thus, as can be seen, a definite improvement in cotton detergency is achieved for both types of cotton cloth when the Nonionic No. 3 is included in the detergent formulation. No advantage, however, is noted with the soiled nylon cloth.

Summary

A CLASS of alkylene oxide based nonionics has been discussed which show considerable promise as foam and detergency improvers for such anionic surfactants as alkylaryl sulfonates.

The products have been found to be of value for both unbuilt light duty detergents and built heavy duty detergents. Of particular interest is the property of these materials to improve the detergency, when evaluated as dishwashing detergents, in both built and unbuilt formulations. It has also been found that these nonionic materials exhibit solubilizing effects for alkylaryl sulfonates, thus making them of additional value for use in liquid formulations. Finally, it has been found that there is an improvement in cotton detergency of built formulations containing these nonionic compounds.

Acknowledgement

The authors wish to express their appreciation to Dr. C. M. Knowles, Dr. C. E. Stevens of our Antara Division and to Dr. G. R. Ward and Mr. R. A. Grifo of this laboratory for valuable assistance and contributions to this paper.

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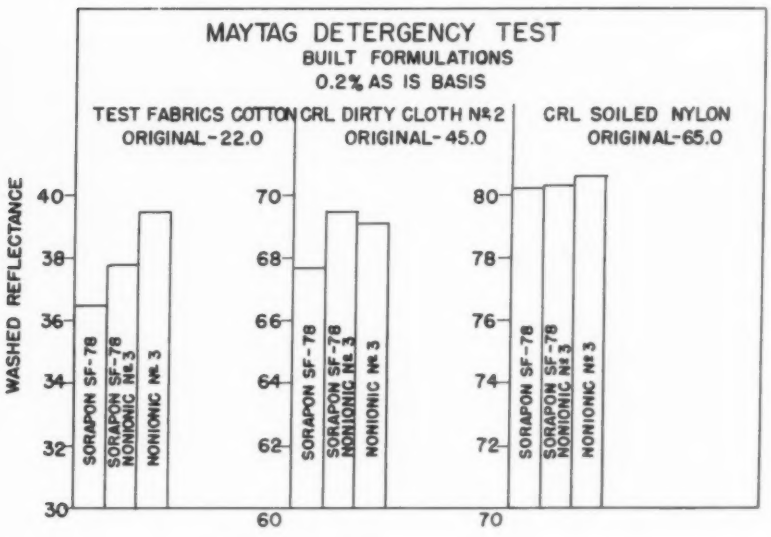
Figure 3.



New Cattle Spray

Emulsifiable concentrate "F-21", a spray formulation based on "Crag" fly repellent and methoxychlor, was introduced recently by Carbide and Carbon Chemicals Co., New York. The product is said to combine low cost with efficiency against all biting flies that attack cattle, including horn flies. "Crag" not only acts as a repellent but also as a booster of the effect of methoxychlor. "F-21" may be used as a water spray, treadle spray, and residual spray and can be applied in back rubbers to control horn flies. The product has good storage stability. The formula, summarized test results, and a sample label are available to spray manufacturers from Carbide at 30 East 42nd Street, New York 17.

Witco Moves Offices

Witco Chemical Co. celebrated the opening of its new executive offices and its 35th anniversary with an open house and reception on May 18 and 19. The new offices are located in the Chanin Building, 122 East 42nd Street, New York.

Since 1953 Witco has expanded manufacturing, research, and sales facilities and has opened new plants in California, Oklahoma and England. Several existing production facilities have been enlarged. During the current year Witco acquired a half interest in Ultra Chemical Works, Inc., which operates plants in Paterson, N. J.; Joliet, Ill., and Hawthorne, Calif. In addition the manufacturing facilities of Emulsol Corp., Chicago, were purchased. The firm now operates and owns 15 plants and four laboratories in the United States and England. Nine sales offices are maintained in seven different states and two in England.

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News

Harold Noble Retires

Harold Noble, vice-president in charge of the insecticide division of S. B. Penick & Co. New York, retired as of June 1, it was announced recently. Mr. Noble, who is 67 years old, has been associated with S. B. Penick for 38 years. He continues as a member of the board of directors and will serve as a Penick consultant.

Harold Noble

Frank Seeland, who has been in active management of the division for some time, assumes full charge.

Mr. Noble, who was appointed a vice-president of the company July 10, 1916, began his career as a buyer of American drugs. From 1917 until 1921 he was an outside salesman handling the general line for Penick. In 1933 he took over sales of derris root, and three years later was appointed head of the insecticide department, succeeding Samuel T. Nickells. During the years of World War II he served on various insecticide industry advisory committees for the U.S. government. He was instrumental in the introduction and sale by Penick of DDT, Ryania, rotenone, the pyrethrum synergist Sulfoxide and other insecticides.

He was honored by a dinner on the occasion of his 30th anniversary with the company. Mr. Noble and his wife make their home in Brooklyn.

— ★ —

Washburn Names Agency

T. F. Washburn Co., Chicago, recently announced the appointment of Heinze and Penfound, Chicago advertising agency, to plan, create and produce a new sales stimulating program. It will be the company's new policy to place its advertising agency's creative services at the disposal of Washburn customers, as part of "Service to Sellers" on which the firm plans to build its merchandising program.

The agency was selected by Washburn's "activating committee" including: Ralph T. FitzSimmons, general sales manager; William B. Winkler, production manager; Nick G. Contos, technical director; and Catherine A. Keane, purchasing agent.

— ★ —

Joins Conn. Chemical

Appointment of Edwin R. Lasner as regional sales manager of Connecticut Chemical Research Corp., Bridgeport, Conn., was announced last month by H. R. Shepherd, vice-president. In his new post Mr. Lasner will work with Mr. Shepherd on an expansion program for the firm's private label division. Mr. Lasner's previous experience has been as manufacturers' representative in the housewares and appliances field in Philadelphia and as a buyer for City Stores and Abraham & Straus, department store, Brooklyn, New York.

Edwin R. Lasner

Mr. Shepherd also announced completion by Connecticut Chemical of a double automatic production line for glass bottle aerosols.

Howard S. Cohoon

Milner Names New Officers

Howard S. Cohoon, former executive vice-president of Milner Products Co., Jackson, Miss., has been appointed president, it was announced last month. He succeeds R. E. Dumas Milner, who becomes chairman of the board, while retaining the duties of finance and budget officer. At the same time Louis E. Wells, Jr., former chief chemist, became vice-president in charge of production and research.

Mr. Cohoon joined Milner Products in November 1948, when it was known as Magnolia Chemical Co., a janitorial supply house with three employees, occupying 800 square feet, and confined to local distribution valued at $25,000. Today the firm occupies 25,000 square feet in its Jackson plant alone, and it has more than 80 brokers with a sales personnel of 600 and 85 warehouses throughout the United States. It is estimated that the company will do a gross business of six million dollars this year. This estimate includes distribution by a newly formed Canadian company, R. E. Milner Products Ltd., of Canada.

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- ★ MIRACULOUS LEVELING PROPERTIES
- ★ LOW DIRT RETENTION
- ★ WATER AND SLIP RESISTANT
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- ★ DOES NOT DARKEN, OXIDIZE OR POWDER

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PERSONALIZED SOAP TISSUES

A new concept of washroom sanitation and cost control

Every place of business is a potential customer

SANITARY—Vervtex soap tissues are used once and thrown away. Fear of spreading infection or contagion is completely eliminated—each person uses a clean, fresh tissue. Messy soap trays and liquid soap containers are banished.

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VERVTEX soap tissues have as a base a special wet strength paper that is impregnated with a gently scented high quality toilet soap.

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Please send me a generous supply of sample tissues and full information about VERVTEX personalized soap tissues.

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Hemperly to Velsicol

Earl Hemperly has been appointed manager of chlor-alkali sales for Velsicol Corp., Chicago, it

Earl Hemperly

was announced recently by John Kirk, vice-president in charge of sales. With headquarters in Memphis, Tenn., Mr. Hemperly is responsible for sales of basic chemicals such as chlorine, caustic soda, hydrogen and sodium hypochlorite, all of which are produced by Velsicol's Memphis plant.

Mr. Hemperly was sales promotion field manager for Baker & Adamson Division of Allied Chemical & Dye Corp., New York, before he joined Velsicol.

—★—

Durez-Hooker Merge

Consolidation of Durez Plastics and Chemicals, Inc., North Tonawanda, N. Y., into Hooker Electrochemical Co., Niagara Falls, N. Y., was approved by stockholders recently. The proposal was authorized by an overwhelming majority of stockholers of both companies. The new board of the consolidated companies consists of eight Hooker directors and three representatives from the board of Durez. E. R. Bartlett is chairman; directors are J. H. Babcock, E. L. Burnham, H. M. Dent, R. W. Hooker, B. Klausen, C. S. Lutkins, J. P. Marquand, R. L. Murray, C. N. Osborne, and J. F. Snyder.

John F. Snyder, formerly vice-president-secretary and a director of Durez was elected a vice-president of the company. The board made the following divisional appointments: Alfred W. Hanmer, Jr., vice-president of Durez Plastics Division in charge of sales; Walter H. Prahl, vice-president in charge of research and development and Edward W. Mathias, treasurer.

—★—

Jessops To England

W. S. Jessop, president of the U. S. Sanitary Specialties Corp., Chicago, accompanied by Mrs. Jessop and their two children, Mary and Adam, are spending three months in England. They are living at 39 Hill St., London, W.1. While in England, the Jessops will spend considerable of their time with Mr. Jessop's family, he being a native of England. They left New York International Airport on June 16 via BOAC and will return about the middle of September.

—★—

Wexler Visits S. America

Irving Wexler, president of Buckingham Wax Co., Long Island City, N. Y., returned July 6 from a six weeks cruise trip to South and Central America. While in Brazil he looked into the prospects of opening a branch manufacturing plant there. Mr. Wexler left the United States on May 23 aboard the *S. S. Brazil.*

—★—

Patrick H. McCarthy Dies

Patrick Henry McCarthy, 86, founder of Vulcan Stamping & Manufacturing Co. and Vulcan Tin Can Co., Bellwood, Ill., died June 10. Born in County Limerick, Ireland, he came to the United States in 1882. In 1887 he joined Norton Brothers in Chicago, which became later the American Can Co. Mr. McCarthy went into business for himself in 1916, first specializing in metal stamping and small tin cans, later centering attention on the manufacture of steel shipping pails and drums. He is survived by his widow, two sons, and four grandchildren. One of his sons, Vern I. McCarthy is president of Vulcan.

Morehouse in New Post

Walter B. Morehouse has been named general sales manager of the industrial division of Nopco

Walter B. Morehouse

Chemical Co., Harrison, N. J., it was announced recently by G. Daniel Davis, executive vice-president. In his new post Mr. Morehouse supervises sales activities relating to specialties, paper chemicals, textile chemicals and other products. Associated with Nopco since 1940 he became an assistant vice-president in 1953. In addition to his new assignment, Mr. Morehouse continues as manager of the paper chemicals division.

—★—

Zonite Names Purcell

Zonite Products Corp., New York, has elected Robert W. Purcell to the board of directors. The announcement was made last month by Colby M. Chester, chairman of the board.

—★—

Pennsalt Moves Offices

The executive offices of Pennsylvania Salt Manufacturing Co., Philadelphia, and headquarters of its operating divisions were moved July 1 from the Widener Building to Three Penn Center Plaza. The firm's telephone number, Locust 4-4700, remains unchanged. Affected by the move are the following divisions: chemical specialties; I. P. Thomas; industrial chemicals; Sharples Chemicals; and Pennsalt International Corp.

New Fuld Bowl Cleaner

A new white emulsion bowl cleaner was introduced recently by Fuld Brothers, Inc., Baltimore. The product is claimed to kill bacteria, algae, and fungi and to dissolve scale and rust. It is a deodorizer as well as a disinfectant-sanitizer.

At the same time Fuld announced price reductions and an expansion of its line of pressure packaged products. All aerosols as well as the bowl cleaner are available under private label or with customers design reproduced directly on the container.

—★—

New Diversey Appointments

Three appointments to newly created sales posts were announced last month by the Diversey Corp., Chicago. J. A. Murtry, former assistant general sales manager has been named manager of a newly created east central division. C. R. Reid has been advanced to sales manager, food industries, and H. M. Pickles becomes his assistant.

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Why not let the nation-wide reputation of Chlordane make more profits for you in the big year-'round clothes moth-spray market? Chlordane is the insecticide household buyers *ask for by name* for safe and sure insect control. With Chlordane in *your* product, you're sure of *high* residual effectiveness for clothes moth control. Write today for information on the advantages of Chlordane for moth control with self-propelled spray formulations. And remember, Chlordane is the preferred insecticide for control of houseflies, mosquitoes, wasps, box elder bugs, crickets, spiders, centipedes, scorpions, roaches, water bugs, silverfish, ants, brown dog ticks, and carpet beetles.
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Gene Riegler

Barr Names Two Execs.

G. Barr & Co., Chicago, recently announced the appointment of Gene Riegler to assistant secretary and alcohol control director and of Douglas Atlas as vice-president in charge of sales. Both posts are newly created.

Mr. Atlas joined Barr six months ago as sales manager. Previously he was associated with Marcelle Cosmetics, Inc., Chicago, as vice-president, and with Burton-Lewis, St. Joseph, Mo., where he was technical director.

With Barr since November 1952, Mr. Riegler served the company as consultant on alcohol and Treasury Department regulations and will continue to serve as alcohol control director. Before joining Barr he had been with the Alcohol and Tax Division of the U. S. Treasury Department's Internal Revenue Service for 19 years.

Douglas Atlas

Lien Chemical Opens New Plant Addition

AN open house celebration to mark the opening of its new plant addition at 9229 W. Grand Ave., Franklin Park, Ill., was held June 11 and 12 by Lien Chemical Co. The first reception was for customers, the second open house was family day for employees.

The two-story addition to the main Lien plant adds more than 25,000 square feet of floor space for offices, laboratory, and display room space to manufacturing, warehousing and shipping facilities of the Lien organization, one of the largest sanitation service and supply companies in the United States.

The open house ceremonies featured a serving of "Smorrebrod" by the explorer and culinary authority, Arnold H. Haverlee, of West Nyack, N. Y., who specializes in imported and exotic delicacies.

Lien Chemical Co. has grown from a one-man organization, founded in 1929 by Carl B. Lien, president of the firm, to an organization which has over 150 sales and service men, a fleet of 10 trucks and large warehouse facilities to stock the more than 500 items manufactured and distributed by the company.

In 1939 Lien began an expansion by opening branch offices and warehouses in Milwaukee, Wis., Rockford, Ill., and South Bend, Ind. Each branch is a complete organization in itself, consisting of a branch manager, sales, service, and office personnel.

Lien laboratories have recently developed products for use in southern and tropical climates. As a result, an experimental branch is now in operation in Miami, Fla. for field-testing purposes.

The move to Franklin Park was made in 1949, when the Lien organization outgrew its quarters at 4353 N. Avondale Ave. Since the move to Franklin Park, a five-truck loading dock and two large warehouses have been added to the building. Freight cars can be unloaded directly into the plant. The present building expansion gives the organization much-needed general office and laboratory space.

The Lien laboratories, under the direction of C. J. Tietema, research chemist, are constantly developing and testing new products, equipment, and methods. In addition to washroom sanitation service, the company manufactures and distributes sanitary maintenance supplies.

—★—

Hercules Advances Present

Hercules Powder Co., Wilmington, Del., announced the appointment last month of John L. Present as manager of cellulose purchases for the Virginia cellulose department. He succeeds Charles H. Lickle who retired from the company June 1. Assistant manager of cellulose purchases for the past four years, Mr. Present has been with the company since 1942.

—★—

Dura Adds Sales Offices

Establishment of new sales and distribution agencies in the United States and Mexico was announced last month by Dura Commodities Corp., New York. Dura is the general agent for the United States, Mexico, and Canada of Krupp Kohlechemie G.m.b.H., producer of synthetic waxes made by the Fischer-Tropsch process.

Additional sales agents appointed by Dura are: Harry Holland & Son, Inc., Chicago, for Northern Illinois, Indiana, Michigan, and Wisconsin; Everitt & Ray, Los Angeles, for Southern California; N. S. Christianson, Colonia, Alamos, Mexico, for the Republic of Mexico; William H. Scheel, Inc., Brooklyn, N. Y., for New York, New Jersey, and Connecticut; and A. B. Kohl Sales Co., Baltimore, for Maryland, Virginia, North Carolina, and the District of Columbia.

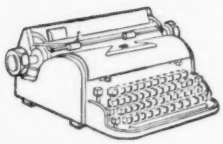
Overnight delivery from nearby warehouse stocks to all customers is the firm's aim, according to I. Y. Strauss, president. Such stocks are currently carried in New York, Boston, Los Angeles, Mexico City, and Montreal, and are planned for Chicago, St. Louis, Atlanta, Baltimore, and Memphis. Demonstration material and formula suggestions and other technical service are at the disposal of customers in all local areas.

—★—

New Carbide Sales Heads

Carbide and Carbon Chemicals Co., New York, has appointed two assistant district sales managers, it was announced last month by E. E. Fogle, vice-president. M. W. Duncan has been named assistant district sales manager of the Kansas City district and J. R. Retter becomes assistant district sales manager of the Detroit district.

New Lien Chemical plant addition in Franklin Park, Ill.



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McCormick Sells Lines

"Red Arrow" insecticides and "Hy-Gro" soluble plant food, both lines of McCormick & Co., Baltimore, have been purchased by Plantabbs Corp., Baltimore, it was announced last month. The products will be manufactured and marketed by the newly formed Hy-Gro Corp. David H. Fulton, Jr., Plantabbs vice-president, is president of Hy-Gro. Other officers of the new corporation are: Edward A. Hartman, vice-president; F. Jackson Andrews, vice-president and chairman of the board; Gordon C. Murray, secretary; and W. James Price 4th, treasurer.

"Red Arrow" insecticides were first marketed by McCormick about 40 years ago. "Hy-Gro" soluble plant food was added to the line about 10 years ago. The recent sale includes all manufacturing and product name rights for both items.

—★—

Ojserkis Lists Supplies

E. Ojserkis & Sons, Inc., Atlantic City, N. J., sanitary supply firm, recently issued a check list of its products. Items are divided into 13 groups to facilitate correlated ordering. Ojserkis sells a full line of janitor supplies, including soap, paper products, floor maintenance materials and equipment.

—★—

No Layoffs Since 1912

No layoff of any employee since the company was founded in 1912—that's the employment record of Emulso Corp. of Buffalo, N. Y., recently unearthed by Robert W. Glenn, president of the company. In addition, with the exception of 1933-1934, in the depth of the depression, the firm has increased its sales every year from 1912 to 1955.

Emulso was founded in 1912 by John W. Glenn, father of its present head. Mr. Glenn, now 83 years old, has been retired since 1945. The company has been located in its own plant at 301 Ellicott St., Buffalo, since 1929, with 25,000 square feet of manufacturing and storage facilities. It covers western New York State with five trucks, but ships its own brands, as well as private brands, all over the country. The firm today employs forty people and produces thirty products including cleaners, polishes, waxes, soaps, detergents and the like.

How far might the aerosol principle go? Fanciful scene (top) from Du Pont's animated movie, "The Spray's the Thing," capitalizes on the modern boy's love for jet propulsion to hint, with tongue in cheek, that the toy sky's the limit. Below: Setting the stage for the principal story theme, a group of tin-hatted bugs, led by their "civilian defense" chief, discuss the impact of modern aerosol insecticides on their own future.

—★—

New Dura House Organ

Dura Commodities Corp., New York, is publishing a monthly bulletin entitled *"Wax Facts."* The second issue appeared in June, carrying information for the wax formulator on new products and formulations.

—★—

Gene Rose Expands Plant

Gene Rose, Inc., Chicago custom pressure packaging firm, announced last month expansion of its production facilities. Plant space now under construction will add 14,000 square feet to existing facilities. The addition will be completed by the end of August.

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Backing you up are:

A GREAT LINE OF HAND CLEANERS

PACKAGING TO FIT EVERY PLANT NEED

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A profitable market for you to sell!

1184 Textile Mills with Dye Houses and
868 Dyers are reported in Complete Details

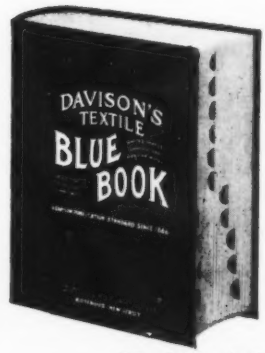
"An Authority in Textiles for Over Ninety Years"

THE NEW 90th YEAR TEXTILE BLUE BOOK is not new in a superficial way. It is new in the essential things that count in a complete guide to the nation's second largest industry — TEXTILES; new from cover to cover in all its more than sixteen hundred pages — new items and over nine thousand new mill reports — new information on some twenty-six thousand dealers in Allied Lines — new in up-to-date information on markets you can sell with profit — new in giving thousands of sources where you can save in buying. Old books are obsolete, expensive to use and unreliable, due to an enormous number of changes, all incorporated in the

90th Anniversary New Davison's Textile Blue Book*

*(Reg. U. S. Pat. Off.)

The large book in the office for circularizing, mailing, telephoning or reference, the small one for your salesmen or traveling executives, will pay their low cost in a few days!



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CSMA Floor Prods. Survey

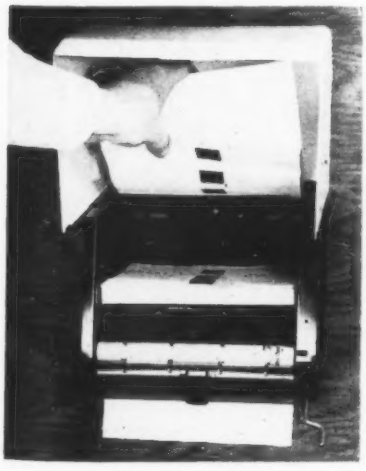
The Waxes and Floor Finishes Division of Chemical Specialties Manufacturers Association is currently conducting its first survey of waxes and floor finishes. Covered are shipments of floor maintenance products designed for use in commercial, industrial, institutional, public, etc. buildings, for the years 1953 and 1954. The survey excludes sales of retail packages. CSMA is sending questionnaires to its members requesting information on the following product groups: wax emulsions, resin finishes, liquid floor cleaners and wax strippers, floor sealers and gym finishes, solvent type waxes, paste wax emulsions, dust mop treatment, and sweeping compounds.

Survey figures will be held in strictest confidence. The circular letter accompanying the questionnaire explains all precautions taken to guarantee complete anonomity to firms, who are requested to send the information by July 15 to Ernst & Ernst, certified accountants, at 1600 Equitable Building, 120 Broadway, New York 5. Results will be made available first to participants, then to members, and finally to the public, as soon as possible.

—★—

West Offers "Fanfold"

A novel continuous method of dispensing folded paper towels was introduced last month by West Disinfecting Co., Long Island City, N. Y. Self adhesive spots on the top and bottom of each package of "Fanfold" toweling enables newly placed packages to adhere to the top of the previous package. Once a "Fanfold" towel cabinet is threaded it need never again be rethreaded. Cabinets may be reloaded any time.



The new tamper-proof "Fanfold" cabinet permits users to take as much toweling as wanted, but is said to produce towel savings up to 40 percent, while reducing maintenance time. The dispenser works on a worm-and-gear mechanism, said to be durable and quick and easy to operate. "Fanfold" towels are currently available everywhere except on the West Coast.

—★—

Reyns in New Quarters

Reyns Supply Co., Odorite Service Division, recently moved to new and larger quarters at 5-11 Washington Terrace, Newburgh, N. Y. The firm handles a full line of sanitary and janitorial supplies including floor maintenance materials and machines, and does rest room sanitizing service. Henry J. Reyns is head of the firm.

#250
CONTAINS 250 MEASURED PACKETS, NET CONTENTS 415 GRAMS (14⅝ OZ.)
CONTROL NO.
NO WASTE! CONVENIENT! JUST PULL AND TEAR
TIMSEN
THE ORIGINAL QUATERNARY (95%) CONCENTRATE
SANITIZES!
DEODORIZES!
TIMSEN destroys . . . it does not mask odors, leaving no odor of its own.
DISINFECTS!
PERMANENTLY STABLE IN STORAGE AND SOLUTION
DOHRMANN HOTEL SUPPLY CO.

Newly perfected bracket for mounting cardboard dispensing unit for Timsen quaternary ammonium disinfectant concentrate was announced recently by Theodore Ross Associates, Venice, Calif. Unit contains 250 measured packets of disinfectant. Packets are torn off roll for mixing with water to sanitize, deodorize or disinfect all types of surfaces.

—★—

Fragrant Fly Spray

A pressure packed combination of fly spray and room deodorant was introduced recently by Hysan Products Co., Chicago. Tradenamed "Vernox" the dual purpose spray comes in twelve-ounce disposable containers. The product combines a cologne bouquet room deodorant with an insecticide.

—★—

New Canco Plant

Construction of a new plant at Arlington, Tex., will start early in August, it was announced recently by American Can Co., New York. A 12.2 acre plant site has been purchased and plans have been completed providing for 185,000 square feet of floor space, 12 truck loading locations and eight undercover locations for loading freight cars.

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12 Ways Better!

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THEIR amazing fidelity to Nature suggests using these Albert Verley synthetic creations in increasing proportions — or to replace the natural product entirely.

Because of their great power, only small quantities are required, keeping the cost well within your means.

Here is an opportunity to revise or rejuvenate some of your principal perfume compositions, with materials from a dependable source. Write for working sample.

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Market Research Group Honors Park

JAMES G. PARK received the memorial award of the Chemical Market Research Association at the group's fifteenth annual meeting held recently at the Hotel Plaza, New York. Mr. Park, vice-president, general sales manager and director of Enjay Co., New York, was CMRA's first president. The award was presented at luncheon by S. D. Koonce, current president of the association, who gave a short outline of Mr. Park's career and achievements. In accepting the award Mr. Park looked back upon the history of the association which grew out of a small group's informal gatherings. He expressed the belief that great potentials are present in market research abroad. The overall living standard will continue to rise and offer further opportunities for chemical market development.

Nine papers were presented at the meeting under the general heading "What's Ahead for Chemicals." Shea Smith, III, of Monsanto Chemical Co., St. Louis, speaking on the future outlook for organic chemicals, said the packaged detergents have now taken over about 85 percent of the total packaged soap and detergents markets. He mentioned the development of bar form detergents. The current feeling is that the upper limit for detergents is in the neighborhood of 70 to 75 percent of the total industry, he said. A leveling off in growth rate began to show in 1951. By 1965 he expects the growth rate of synthetic detergents as a soap replacement to be close to the growth rate of the total soap industry which appears to be about 2.5 percent per year.

Economic poisons were included in a study of chemicals for agriculture presented by Richard F. Messing, Arthur D. Little, Inc., Cambridge, Mass. An estimated $450 million is being spent by farmers on economic poisons, Mr. Messing said. Insecticidal materials account for about $200 million of this total, the rest being spent on veterinary products, fungicides, weed killers, plant hormones and defoliants. Losses due to plant disease, animal disease, insects and weeds total about $13 billion, most of the damage occurring in the non-insecticidal category. The maximum potential for economc poisons may be gauged from these figures Mr. Messing pointed out. He stressed that less than 10 percent of the expenditure for economic poisons goes for weed killers, even though the estimated loss due to weed damage amounts to nearly 30 percent of the total crop loss. Return to the farmer on his investment in the economic poisons field is reported amounting to $5 to $20 per dollar spent. This figure however is derived from only a few selected test cases.

James G. Park

At the annual business meeting CMRA elected the following officers for the fiscal year beginning July 1: C. P. Neidig, White Weld Co., Philadelphia, president; E. M. Ott, Pennsylvania Salt Manufacturing Co., Philadelphia, president-elect; F. S. Godron, Victor Chemical Works, Chicago, treasurer; and W. D. Morrison, Celanese Corp. of America, New York, secretary. Directors are: W. H. Healey, General Aniline & Film Corp., New York; Parker Friselle, Dow Chemical Co., Midland, Mich.; D. L. Taylor, Hooker Electrochemical Co., Niagara Falls, N. Y.; L. H. Flett, consultant, New York; and S. D. Koonce, Jefferson Chemical Co., New York.

—★—

Hanna Witt Sales Head

The appointment of Robert E. Hanna as sales manager of Harry L. Witt & Co., Pittsburgh, was announced late last month by Albert B. Witt, general manager. The Witt company, established in 1908, handles a complete line of janitor supplies in the Tri-State area and specializes in floor maintenance materials and equipment. Mr. Hanna was formerly associated with Dixie Janitor Supply Co., Washington, D. C., and before that was with American Janitor Supply Co. in New Orleans. He is to be in charge of Witt's expanding sales force. Mr. Hanna will also direct the firm's program of enlarging its territory.

—★—

'55 Insecticide Sales

Estimated consumer purchases of household and commercial insecticides will reach $130 million in 1955, it was reported recently by American Can Co., New York. More than 50 million gallons of insecticides will be used in 1955, the can company reports. Approximately 50 million aerosol containers will be used to package a large part of this total gallonage for household use. The current use of pressure packages for insecticides is four times greater than it was five years ago, according to American Can.

—★—

New Three Ply Towel

A new three-ply melamine treated towel was introduced recently by Cross Country Products Corp., Island Park, N. Y. Said to be highly absorbent, yet leave no lint, the new towel is claimed to have good wet strength. It measures 13½ inches by 19 inches, and comes in cartons of 500 each. Also available is metal baked white enamel dispenser which holds 100 towels. Towels cost approximately one cent each; the dispenser is $3.50.

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BIG X Sweep Mop

Here's a mop that snatches up dust on contact. And it's amazingly durable... lasts and lasts. Can be removed from block for washing. Handles can't break due to exclusive new, rugged "Gibraltar" brace... BIG X comes in various widths up to 5 feet!... It's our leader!

VICTORY Wet Mop

Your maintenance men will cheer you for ordering VICTORY mops. Soak up dirt and water at high speed. A heavy-duty, long-wearing mop — the choice of thousands of buyers.

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A high-speed performer. Reduces cost of applying wax, seals, varnish. More professional floor finishers use HOLZ-EMS than any other applicator.

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Colored Floor Finish

Non-fading color and non-dusting properties are imparted to concrete floors by treatment with a pair of new concrete finishes it was announced recently by Multi-Clean Products, Inc., St. Paul, Minn. Designed for combined use, the products are called "Kwik-Color Seal" and "Kwik-Color Wax."

After the concrete floor has been cleaned and etched "Kwik-Color Seal" is applied. It is said to be odorless, non-flammable, and easy to apply, and to require 20 minutes for drying hard to the touch. Water resistance develops after a period of about 14 to 20 days. For protection of the floor during this "curing" interval, "Kwik-Color Wax" is applied. This waterproof emulsion wax is said to have high gloss and fast drying properties, returning the floor to traffic within two hours, after etching, sealing and waxing. Both products come in tile red and light gray. The seal covers about 800 square feet per gallon, the wax about 1000 square feet per gallon.

New non-fading, non-dusting color floor finishes for concrete

—— ★ ——

Two New Solvents Plants

Two new plants have been opened recently by the Solvents and Chemicals Group, Chicago, bringing the organization's network of local service points to 17 units. Missouri Solvents & Chemicals Co. has new facilities in Kansas City, Mo., and Texas Solvents operate a new plant in Dallas.

—— ★ ——

Floor Cleaner Lab Tests

Specifications for a laboratory testing program for surface cleaners for maple floors are now available to interested floor cleaner manufacturers from the Maple Flooring Manufacturers Association, 35 East Wacker Drive, Chicago 1.

The purpose of the tests is to determine the acceptability of cleaning materials whose function is the removal of surface dirt from finished maple, beech and birch floors. The tests are designed to permit the use of a variety of commercially available cleaning materials which do not show a deleterious effect on heavy duty floor finishes. The requirements of each test are, in general, based on test procedures accepted by the industry as standard.

The surface cleaners are being tested in the wood research laboratory of Timber Engineering Co., Washington, D. C. The laboratory examinations started about May 15.

—— ★ ——

New Microcell Rug

All the advantages of sponge without its disadvantages are claimed for "No-Trax Airug" a new rubber floor mat made by Superior Rubber Manufacturing Co., Chicago. This floor covering material is said to give resilience without moisture absorption owing to its microcellular construction, and to be tear resistant and easy to clean. "Airug" is available in a regular and an oil resistant type. The latter is made of "Neoprene" and is claimed to be resistant to oils, greases, and a number of acids, alkalies and other industrial chemicals. Both types come in two sizes and are one quarter of an inch thick.

—— ★ ——

Whitfield to Nuodex Div.

Jacques J. Whitfield has been named manager of the newly formed stearates division of Nuodex Products Co., Elizabeth, N. J., it was announced recently by T. M. O'Neil, vice-president for marketing. Prior to joining Nuodex, Mr. Whitfield was for 16 years with Sun Chemical Corp., New York, as stearate sales manager.

—— ★ ——

Watson Succeeds Hall

L. Coleman Hall, manager since 1949 of the Hattiesburg, Miss., plant of Hercules Powder Co., Wilmington, Del., will retire at the end of 1955. He relinquished his post on July 1 and continues as a consultant to the company for the remaining six months of the year.

Harry W. Watson, plant superintendent of the firm's Brunswick, Ga., plant succeeds Mr. Hall as manager at Hattiesburg.

Gordon E. Lowe, assistant plant superintendent at Brunswick, now succeeds Mr. Watson as plant superintendent. He has been with Hercules since 1941. Mr. Lowe's place as assistant plant superintendent at Brunswick is taken over by Barron B. Boyd, former area supervisor at Brunswick. He joined the firm's pilot plant division in 1941.

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Davis to Velsicol

M. L. Davis has joined the industrial sales division of Velsicol Corp., Chicago, it was announced last month. In his new post Mr. Davis will handle sales for Kansas City and for the states of Kansas, Oklahoma, Nebraska, and Colorado. His headquarters will be in Kansas City, Mo.

Prior to joining Velsicol Mr. Davis was sales engineer for Nielson & Fryer, manufacturers representatives for chemical controls equipment in the Chicago area.

— ★ —

Union Carbide Elects Kinzel

Union Carbide and Carbon Corp., New York, has elected Augustus B. Kinzel as vice-president in charge of research, it was announced last month by Morse G. Dial, president. Dr. Kinzel succeeds George O. Curme, Jr., who is retiring as vice-president. Dr. Curme will continue as a director of the corporation.

Dr. Kinzel has been engaged in research work with Union Carbide since 1926, when he joined Electro Metallurgical Co. as a research metallurgist. He became chief metallurgist in 1931 and vice-president of Electro Metallurgical in 1944. In July, 1954 he was appointed director of research of Union Carbide and Carbon.

— ★ —

Packard Johnson V.-Pres.

Howard M. Packard has been named executive vice-president and a director and William C. Kidd has been elected treasurer by S. C. Johnson & Son, Inc., Racine, Wis., it was announced last month. Mr. Packard, who joined Johnson in 1946 as treasurer, was elected vice-president in 1953, and international vice-president early this year. Before going with Johnson, he was assistant secretary of Marshall Field & Co., Chicago. In his new position he succeeds Fred M. Farwell who resigned.

Mr. Kidd also joined the firm in 1946. Prior to his new appointment he served successively as auditor, accounting manager, assistant to the executive vice-president, and as a regional director in Johnson's international division.

Howard M. Packard

At the same time election of a new director was announced. He is James Scott Kemper, chairman of Lumbermen's Mutual Casualty Co., Chicago, and former United States ambassador to Brazil. Mr. Kemper succeeds the late Edward H. Wadewitz.

Calspray Names Trumble

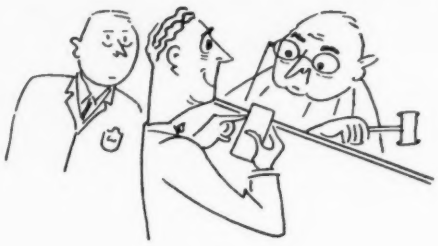
Richard H. Trumble has recently been appointed branch manager of the Wenatchee, Wash., offices of California Spray-Chemical Corp., Richmond. He succeeds Harold J. Matson who has been advanced to the position of district manager for the Pacific northwest area.

— ★ —

Newport Advances Drubel

Charles Drubel has been named manager of the Chicago branch office of Newport Industries, Inc., New York, it was announced last month by R. J. Spitz, vice-president in charge of sales. In addition to handling local sales, this office supervises Newport distributors in the midwestern states and offers technical services to customers in this area. Mr. Drubel joined Newport in 1948 in technical sales and service. Before coming to Chicago in 1953 he had served in the firm's Cincinnati and New York offices.

Four toilet kits — two for men and two for women — were announced recently by Amole, Inc., Dayton, O., for sanitary supply jobbers desiring Christmas presents for their clients. The "Helen Wood" bath kit consists of a two-ounce jar of cream deodorant; an 8-ounce bottle of lotion and an 8-ounce bottle of "Aquafoam" bubble bath. The woman's razor kit features an 8-ounce bottle of "Follow-Up" body lotion and an electric shaver for women. For men there is a "Trims" silver set consisting of a chrome fingernail nipper, a chrome toenail clipper, and a four-ounce bottle of after shave lotion. The "Birchbrook" set for men has a gold fingernail clipper, a cigarette lighter and a four ounce bottle of after shave lotion



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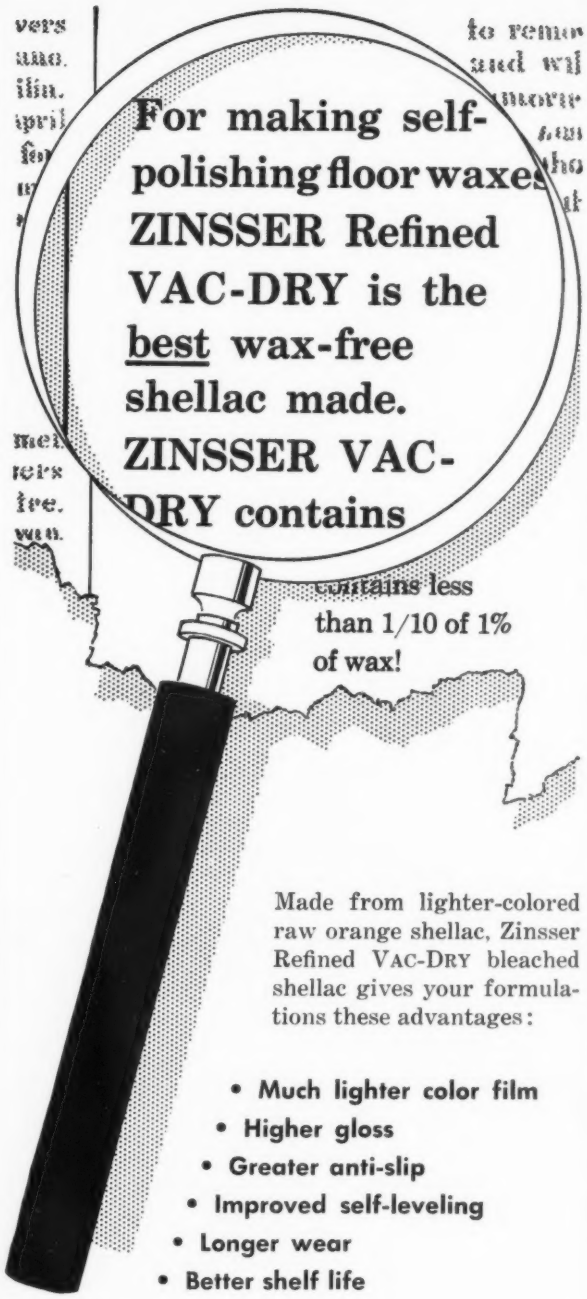
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Molnar Reelected

Nicholas M. Molnar, head of Molnar Laboratories and president of Fine Organics, Inc., New York, has been reelected president of the Cooper Union Alumni Association, it was announced recently. Mr. Molnar is a graduate of the Cooper Union School of Engineering.

—★—

"Genetron" Aerosols Film

What an aerosol is, why it works, and how its principles are used in space and residual sprays and foam type aerosols are reviewed in a new sound-slide film released last month by General Chemical Division, Allied Chemical & Dye Corp., New York. Successive steps in producing a pressure package with "Genetron" propellents by the refrigeration and pressure filling methods are shown in the 25-minute film entitled "Push-Button Living." The spectacular growth of the aerosol industry is traced from the "bug-bomb" of World War II to today's diversified range of pressure-propelled products covering 85 different specialties fields.

Produced by General Chemical as an industry service, the film was previewed recently at the mid-year meeting of the Chemical Specialties Manufacturers' Association in Chicago. It is available free of charge for public showings from the company's "Genetron" Department at 40 Rector Street, New York 6.

—★—

New Transmission Fluid

Permatex Co., Brooklyn, N. Y., recently placed on the market a fluid said to be suitable for use in all eight principal automatic transmission systems. The product is claimed to retain correct viscosity over a temperature range from minus 40°F to plus 300°F. Gum, sludge and corrosion preventive is incorporated in the fluid, which is marketed in quarts, gallons, and five and 53 gallon containers.

—★—

Freedman Now Exec. VP

Carl F. Freedman, formerly vice-president and general manager of the American Agile Corp., Maple Heights, O. has been named executive vice-president, it was announced last month by J. A. Neumann, president. Agile makes plastic and other corrosion-resistant containers for the processing industries.

Schuette in New Dow Post

William H. Schuette has been appointed general manager of the Midland Division of Dow Chemical Co., Midland, Mich., it was announced recently by Mark E. Putnam, executive vice-president. With Dow since 1941, Dr. Schuette had served as assistant to the general manager since Jan. 1, 1955. Dr. Putnam, who had previously handled the functions of general manager of the division, will now devote his entire attention to company-wide administrative affairs.

—★—

Lehn & Fink TV Show

Lehn & Fink Products Corp., New York, sponsor of the "Sunday Lucy Show" announced last month that the TV coast-to-coast broadcast will continue through the summer. An innovation, the step is part of the sponsor's campaign to build sales of items with summertime appeal.

Although the Monday night "I Love Lucy" show leaves CBS for its annual vacation, the Sunday Lucy program will continue to present the 1951-52 Lucy films weekly over the CBS-TV network.

Shell Names Sales Execs.

Five management changes in the marketing department of Shell Chemical Corp., New York, were announced last month by G. W. Huldrum, Jr., sales manager.

W. C. Lowrey, St. Louis, district manager since 1953 is now manager of the Newark district. He joined Shell in 1948 as a technical salesman in Cleveland.

W. A. McCormick, with Shell since 1948, succeeds Mr. Lowrey as St. Louis district manager. He has been senior technologist in marketing-administration since early this year.

R. W. Campbell, senior technical salesman for the Los Angeles district since 1954, has been appointed Los Angeles district manager. He joined the company in Los Angeles, California, in 1947.

G. E. Garland, New York district manager since 1947, was appointed to the general sales manager's staff. He went with Shell as a technical salesman in 1946.

D. P. Jones, who was on the sales manager's staff, becomes New York district manager. He became associated with the firm in 1947 as a junior technologist.

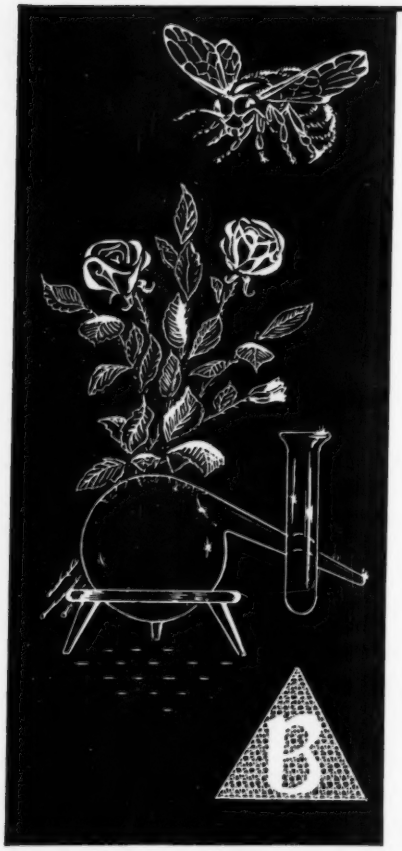
W. C. Lowrey

W. A. McCormick

R. W. Campbell

G. E. Garland

D. P. Jones



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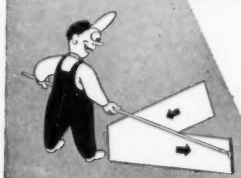

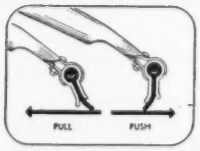

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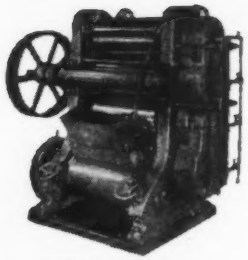

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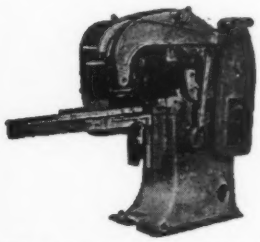

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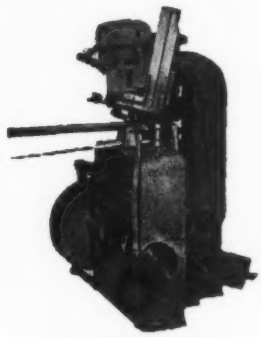

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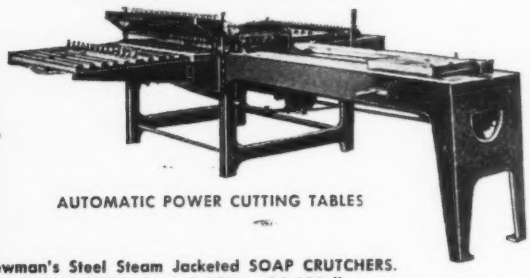

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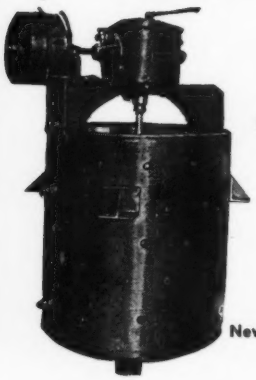

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Supt.-Manager: Long experience with large producer of soap and spray-dried detergents. Capable of handling plant in its entirety including industrial relations and technical problems. Now free to make connection. Will consider consulting basis. Address Box 472, c/o *Soap*.

Chemist: Eight years experience detergents, chemical and household specialties. Includes research, technical service, analytical, formulation and evaluation. Interested in laboratory position with progressive firm with opportunity for advancement or consulting on part-time basis. Would consider aerosols or perfumery. Metropolitan New York area preferred. Address Box 473, c/o *Soap*.

Development Chemist: 7 years experience in development of wide range of chemical specialty products including household, maintenance, and agricultural emulsion materials. Desire responsible position especially where new types of products and improvements on existing products are desired. Address Box 474, c/o *Soap*.

Chemist: Widely experienced in waxes, polishes, emulsions, floor coatings, automotive chemicals, household products, — desires connection with progressive firm. Metropolitan New York area preferred. Experienced in production, development and research. Address Box 476, c/o *Soap*.

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Chemist: Ph.D., 20 years industrial experience in insecticides, disinfectants, waxes, cleaners and other sanitary chemicals. Previous experience includes Government consulting in pesticides. Able to integrate research with production and sales. Desires responsible position. Address Box 478, c/o *Soap*.

Miscellaneous

Phila. Area: Adding several non-conflicting accounts. Broad chemical experience with good coverage. Will enter discussion with producers of the following: Perfume raw materials, containers, pharmaceutical raw materials, synthetic detergents, miscellaneous chemicals for cosmetics, pharmaceutical, paint, rubber, soap and aerosol leaders. Also flavor compounds. Will cooperate on sales development of new products. Address Box 479, c/o *Soap*.

New Products: Important Belgian firm manufacturing toilet soaps, soft soaps, soap and cleaning powders will welcome suggestions to extend present line of production through the addition of new articles. Send details to Box 480, c/o *Soap*.

Wanted: The following back issues of *Soap* magazine to complete our library: 1951-January, April June, Sept. and October; 1952-February, April, July and August and also April 1953. Please communicate with William F. Tomlinson, Stepan Chemical Company, 3250 South Kedzie Ave., Chicago 23, Ill.

Full Up-To-Date Facts on Chemical Specialties. See Page 126.

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Are You Posted on SYNTHETIC DETERGENTS and SOAPS & DETERGENTS? see page 132.

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For Sale: Soap dispensers for waterless, cream, paste — porcelain enameled—heavy construction—10 pound capacity. National Soap Dispenser, 10216 La Salle Ave., Los Angeles 47, Calif.

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Lehn & Fink Honors Plaut

Employees of Lehn & Fink Products Corp., New York, honored their president, Edward Plaut, for his 40 years with the corporation at the company's second annual Quarter Century Club awards dinner at the Waldorf Astoria Hotel on May 3. More than 100 attended. The dinner also marked the company's 81st birthday and saw the induction into the Quarter Century Club of six employees who have completed 25 years with Lehn & Fink. This brought to 107 the number of 25-year employees currently with the firm, one of the nation's top employee length-of-service records. Without a strike in its 81 years, Lehn & Fink also has one of the outstanding labor-management records in the country.

Accepting an engraved Steuben-glass vase from the Quarter Century Club, Mr. Plaut declared, "We are proud of our excellent labor relations; I think the fact that more than 60 per cent of our people are shareholders in the corporation has been an important factor."

The half-dozen new members of the Quarter Century Club each received a gold service pin, an extra week's vacation, and the choice of a 14-carat gold Longines watch or a sterling silver bowl.

Founded in New York in 1874 by two German immigrants, Lehn & Fink now has eight plants, two in the United States and six abroad, and numbers 1,200 employees in this country alone.

—★—

ADM Expands Plant

A major plant expansion at Mankato, Minn., is scheduled for completion Oct. 1, it was announced recently by Archer-Daniels-Midland Co., Minneapolis. "Kaysoy" soybean proteins, which are used in many specialties including insecticide sprays, will be among products of the new plant. Total Mankato production will be up about 10 percent when the facilities are on stream.

New Johnson Advtg. Men

Appointment of Douglas L. Smith and William M. Schmick to newly created posts in the advertising and merchandising department of S. C. Johnson & Son, Inc., Racine, Wis., were announced last month by Stuart D. Watson, advertising and merchandising director.

Mr. Smith, as advertising manager, will coordinate the firm's over-all advertising program. He will cooperate in developing campaigns and provide services and materials required for product promotions. He was previously an account executive for Batten, Barton, Durstine & Osborn, Inc., New York.

Mr. Schmick will develop product recommendations, packaging, advertising, and other promotional plans for "Car-Plate," "Carnu," "Car Plate" cleaner, and other S. C. Johnson products. Mr. Schmick was formerly senior brand manager (new products) for Procter & Gamble Co., Cincinnati.

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Hercules Names Eurenius

Carl W. Eurenius, director of sales for the cellulose products department of Hercules Powder Co., Wilmington, Del., since 1948, has recently been appointed assistant general manager of the department. He is succeeded as director of sales by Werner C. Brown, formerly an assistant director of sales in the department. Both appointments were announced late last month by Elmer F. Hinner, general manager of the department.

Mr. Eurenius joined Hercules' cellulose products department in 1942, became supervisor for chlorinated products in 1946, and at the end of the same year rose to manager of the sales research division of the company.

Mr. Brown, with Hercules since 1942, was named supervisor of the cellulose gum division in 1949 and assistant director of sales in 1952.

— ★ —

Boston BIMS Golf Winners

BIMS of Boston held the first golf outing and steak dinner of the season on June 23 at Weston Golf Club. Golf prizes were won by the following participants: Tom Reidy, Shulton, Inc.; A. L. Weston, BB Chemical Co.; E. B. Hubbard, J. Hubbard Co.; Harry G. Morgan, Sterwin Chemicals, Inc.; John Hall, Dings & Schuster; John I. Vandewater, R. W. Greeff & Co.; Hart Harris, Jr., S. B. Penick & Co.; and Herbert S. Kishbaugh, Solvay Process Division.

Door prizes went to: T. Fred Baker, Jr., Fritzsche Bros., Inc.; C. P. Seaverns, Howe & French, Inc.; M. E. Collins, LePage's, Inc.; James T. Duane, Dow Corning Corp.; J. E. Marshall, Colliers Insulated Wire Co.; Hugh M. Titus, Merck & Co.; and A. M. Eggeman, Rexal Drug Co.

Raymond G. McCue, of Shulton, Inc., won the special prize of an outdoor barbecue wagon.

Next golf outing of BIMS of Boston will be held at Vesper Country Club, Lowell, Mass., on Aug. 18.

Swicker Joins Washine

Alvin I. Swicker has joined the chemical sales department of Washine-National Sands, Inc., Lodi, N. J., it was announced last month. Prior to his recent appointment he had been associated with Feasy & Besthoff, Inc., New York, since 1946.

Antistatic Specialties

(*From Page* 163)

they can be performed without special equipment and are often very useful. For the more precise measurement of static charges it is necessary to set up some type of electrostatic voltmeter and preferably an apparatus for mechanically producing the charging contact and separation sequence. There are a number of electrostatic voltmeters available in various ranges. It is not usually necessary to make measurements over 2,000 volts since no antistatic agent would be considered very effective that permitted the accumulation of such a charge. Electrical resistance measurements are also of considerable importance in evaluating antistatic agents, particularly on textiles.

For detailed information on precision measurements of static, the research worker may refer to the published articles of G. W. Graham, Hayek and Chromey, D. J. Lehmicke and the American Association of Textile Chemists and Colorists. (See bibliography).

The basic manufacturers of organic chemicals, especially surface active agents, are all currently doing extensive research work in this field and are anxious to cooperate with the chemical specialty manufacturers in the development of marketable antistatic products.

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Hayek and Chromey, *Am. Dyestuff Rptr.* 40, p. 164 (1951).

Lehmicke, *Am. Dyestuff Rptr.* 38, p. 853 (1949).

American Association of Textile Chemists and Colorists, 1954 *Technical Manual and Year Book*, p. 158.

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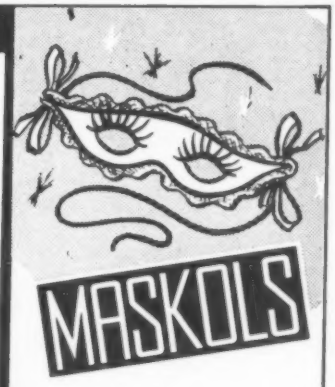

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Coming Meetings

American Public Health Association, 83rd annual meeting, Municipal Auditorium, Kansas City, Mo., Nov. 14-18.

Association of American Soap & Glycerine Producers, Inc., 29th annual meeting, Waldorf-Astoria Hotel, New York, Jan. 25-27, 1956.

Chemical Market Research Association, Cavalier Hotel, Virginia Beach, Sept. 22 - 23; joint meeting with CCDA, Carter Hotel, Cleveland, Nov. 14-15.

Chemical Specialties Manufacturers Association, luncheon and general membership meeting, Savoy Plaza Hotel, New York, Sept. 28; 42nd annual meeting, Roosevelt Hotel, New York, Dec. 5-7; 42nd midyear meeting, Drake Hotel, Chicago, May 20-22, 1956.

Drug, Chemical and Allied Trades Section of the New York Board of Trade, Pocono Inn, Pocono Manor, Pa., Sept. 22-24.

Entomological Society of America, annual meeting, Netherlands Plaza Hotel, Cincinnati, Nov. 29-Dec. 2.

Exposition of Chemical Industries, Commercial Museum and Convention Hall, Philadelphia, Dec. 5-9.

National Agricultural Chemicals Association, annual meeting Essex & Sussex Hotel, Spring Lake, N. J., Sept. 7-9.

National Chemical Exposition, Public Auditorium, Cleveland, Nov. 27-30.

National Motel Show, Chicago, Oct. 24-26.

National Pest Control Association, 22nd annual convention, Denver, Colo., Cosmopolitan Hotel, headquarters hotel, Oct. 17-20.

National Sanitary Supply Assn., 33rd annual convention and trade show, Conrad Hilton Hotel, Chicago, Apr. 29, 30 and May 1, 2, 1956.

Packaging Machinery Manufacturers Institute annual meeting, The Homestead, Hot Springs, Va., September 15-18.

Society of Cosmetic Chemists, seminar, Barbizon Plaza Hotel, New York, Sept. 15, 16; 10th anniversary meeting, Commodore Hotel, New York, Dec. 15.

Synthetic Organic Chemical Manufacturers Association, monthly luncheon meetings, Commodore Hotel, New York, Sept. 14, Oct. 11; annual dinner, Dec. 1.

Western Plant Maintenance & Engineering Conference and Show, Pan Pacific Auditorium, Los Angeles, July 12-14.

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Tale Ends

HAROLD Noble, vice prez of S. B. Penick & Co. has announced his retirement after 35 years with the company, although he will continue as a member of the board of directors. For years, he headed the insecticide division of Penick having won his spurs in the famous pyrethrum dogfight days of the nineteen thirties long before DDT or chlordane were ever heard of. Those were the days when the three Ps (Penick, Powell and Prentiss) and MGK had a four-cornered slugging match for every pyrethrum order that popped up anywhere. It was rugged, — and no foolin'. Remember, Harold?

* * * * *

It seems you can't keep a good man down. Charley Luckman's name keeps bobbing up in the news regularly. The latest is that the erstwhile president of Lever Brothers is to be one of the architects on the new giant office building, The Palace of Progress, which is to be built atop Penn Station in N. Y. And if the early plans mean anything, they are fabulous. The building will be twenty-odd stories high and cover two full city blocks. Instead of old-fashioned murals on the walls of the public rooms, there will be television everywhere. On the architectural staff with Luckman will be Billy Rose, showman and night club operator. If they want glamour in the new building, these boys have it.

* * * * *

Spraying four million acres of forest land in New Brunswick, Canada, with DDT to kill a serious infestation of spruce budworms has brought an angler's tragedy to the territory. It seems the DDT getting into the rivers has killed off millions of young silver salmon, king of Canadian game fish. In addition, the DDT has killed off the insects on which the young fish feed. In some areas, small fry have been wiped out completely and two-thirds of the young salmon killed off. But the spruce forests must be saved, — or where do we get our newsprint, — so the spraying will go on.

* * * * *

Charley Sparhawk who used to extract and sell perfume fixatives made from the glands of skunks, wildcats, etc. and was well known for his "Skunkadora," has become the victim of a psychiatrist. Not in the manner one would expect however. This psychiatrist was an antique collector, but instead of buying them, he allegedly stole them. Charley's house at Piermont, N. Y. was one of the places visited by the thief who removed several valuable antiques as furnishings for his N. Y. office. The thieving doctor was caught and arrested. Ironically, he happens to be psychiatric director for a high N. Y. court. We wonder if Charley got his antiques back.

William Sims, II, executive vice-president of Colgate-Palmolive Co. and president of Colgate International, will be the next president of Colgate-Palmolive, we hear from the grapevine. He, of course, will succeed Joseph H. McConnell, who stepped out as head man at Colgate earlier this year. Mr. McConnell's newly printed stationery, with the address of Colgate's new headquarters now being built on Park Ave. in New York City, is a collector's item, we hear. Incidentally, occupancy, scheduled for late this summer, has now been moved back until fall. Book is being made that it will be closer to Christmas before the big shift takes place.

* * * * *

The little things sometimes are very important. When Atlas Powder Co. recently moved its offices from downtown Wilmington, Del., to shiny new headquarters outside of town the place was thought to be complete down to the last detail. It is, too, except for one minor oversight. There is no barber shop in the joint. Seems the fellows at Atlas, as in many other companies, like to have their hair cut on company time. Could it be that Atlas management realized this?

* * * * *

For years, the scouring powder boys have told Mrs. McGuff, our housewife, how to scour her pots and pans inside and out so you could see your face in them. Now, some scientific bloke has stepped forward and suggested to the aforementioned Mrs. McGuff that she "not" polish the bottoms of her pans. Leave them dull, says this scientific character, because they then absorb more heat and save fuel. Sure, we all knew that, but have scrupulously kept it a secret for years. And then along comes this fellow,—ah, somebody's always taking the joy out of life!

* * * * *

FTC is taking a close look at slack filling of aerosols, we hear. Seems fillers are having trouble with new large size cans, which they're not accustomed to filling.

Smoke signals...

IS your advertising just "smoke signals"—hoping somebody you can sell may see it? Or is it specific, aimed at definite fields? If it be the field of detergents and soaps, insecticides, disinfectants, aerosols, floor products, automotive specialties, janitor supplies and the like, for example, you can't miss with regular advertising in

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Manufacturer

* FOR 60 YEARS

a fine tradition
in the creation
of basic materials
for PERFUMES and
PERFUME SPECIALTIES

Essential Oils

Aromatic Chemicals

Terpeneless Oils

Oleoresins

True Fruit and Imitation Flavors

UNGERER & CO. NEW YORK

Ungerer & Co.

161 Avenue of the Americas, New York 13, N. Y.
plant and laboratories
Totowa, N. J.

CHICAGO • BOSTON • PHILADELPHIA • ST. LOUIS • LOS ANGELES • ATLANTA

GIVE YOUR BUILDING THE MINT TREATMENT!

A Disinfectant That *DOESN'T SMELL* Like A Disinfectant!

There is nothing finer than the fresh, clean odor of spearmint. WINTER-PHENE is compounded with oil of spearmint and peppermint along with germ-killing ingredients to produce a disinfectant that will keep the air in your building freshly scented and clean-smelling all year round! A few ounces of WINTER-PHENE in the mopping solution acts as a powerful deodorant and disinfectant — sanitizes as it cleans. But above all you eliminate musty, foul odors coming from floors, rest room fixtures, etc.

WINTER-PHENE will do for your building what chewing gum does for your mouth.

Winter-phene

THE GERMICIDE WITH A DELIGHTFUL MINT ODOR

JAMES Varley & SONS INC

MAIL THIS COUPON TODAY!

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1200 Switzer Ave., St. Louis 15, Mo.

Please send FREE sample and information on WINTER-PHENE Mint Odored Germicide.

Name.....

Address.....

City..... State.....

The above advertisement is being featured in Trade Magazines for the benefit of WINTER-PHENE Jobbers.